# Railway Maintenance Engineer

Volume 15 | February 1919 | Number 2

(With which is incorporated the Engineering and Maintenance of Way Edition of the *Railway Age Gazette* and *Railway Engineering and Maintenance of Way.*)

Published on the last Thursday preceding the date of issue by the
SIMMONS-BOARDMAN PUBLISHING CO.,
TRANSPORTATION BUILDING, CHICAGO, ILL.

NEW YORK: WOOLWORTH BLDG. CLEVELAND: CITIZENS' BLDG.
WASHINGTON: HOME LIFE BUILDING.
LONDON: QUEEN ANNE'S CHAMBERS, WESTMINSTER.

EDWARD A. SIMMONS, *President.* LUCIUS B. SHERMAN, *Vice-President.*
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Entered at the Post Office at Chicago, Ill., as mail matter of the second class.
Subscription price, $2.00; foreign countries, $2.50.

WE GUARANTEE that of this issue 7,700 copies were printed; that of these 7,700 copies 7,374 were mailed to regular and paid subscribers, 59 were mailed to advertisers, 10 were mailed to employees and correspondents, and 257 were provided for new subscriptions, samples, copies lost in the mail and office use; that the total copies printed this year to date were 15,700, an average of 7,850 copies a month.

The *Railway Maintenance Engineer* is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.).


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**Will There Be a Surplus of Labor?**

There is much speculation and conflicting opinion regarding the supply of maintenance of way labor which will be available during 1919. Some believe that there will be a large surplus and point to the large number of employees already released from the munitions and war materials plants and the many more still to be released. They also refer to the 4,000,000 men to be discharged from military service and point out the rapidly mounting surplus of labor which is already evident in the larger cities. Their opponents call attention to the large amounts of work deferred during the war, the resumption of which will now stimulate all lines of business and provide much employment. It is too early to tell exactly which of these viewpoints is correct. The attitude of the government regarding improvement work will exert a marked bearing upon it directly and through the impetus which it will give to industrial recovery. However, railway men should not count too strongly on the presence of a large supply of labor. Safety would appear to urge continued attention to labor-saving devices and other steps which will insure a maximum output of work.

**Problems of the Wage Increases**

Interpretation No. 2 to Supplement No. 8 definitely classes house and bridge carpenters under the provisions of that supplement to General Order No. 27. This is in direct contradiction to the interpretation that has, in at least one region, been made of Section 6, Article 1, Supplement No. 4, which has been construed, after careful analysis, to include employees skilled in building, maintaining and dismantling bridges and buildings, water tanks, coaling statons, etc., wood work, bench carpenter work, carpenter work in buildings and all other work generally recognized as carpenter work. The confusion which has attended the execution of the wage orders and supplements issued by the Railroad Administration is typified by the procedure on some roads in the case of carpenters. Their rates of pay were first established in accordance with paragraph (e), Article 1, of Supplement 8. Subsequently, after careful studies of the application of Supplements 4, 7 and 8, to certain employees in other than the mechanical department, carpenters, tinsmiths, plumbers and other maintenance of way employees were considered to be included under the provision of Supplement No. 4, and their rates of pay were established accordingly. Under the recent interpretation all doubts are dispelled as far as carpenters are concerned and they now revert to the rates of pay established by the provisions of Supplement No. 8.

**Requisites for a Concrete Tie**

A contemporary, "Concrete," gives a list of requisites for a concrete tie which we quote as follows: "It should be no thicker than the present wood tie, as it will be used in conjunction with wood ties, the concrete ties being used to replace wood ties. It should be so designed as to resist center binding action. The rail should not bear directly upon the concrete. The method of securing rails to ties should be simple and effective. Any renewable parts of ties, such as rail fastenings, etc., should be replaceable without great trouble." These, seem to cover the ground fully, although the require-

ment that the rail should not rest directly on the tie might be stated more fully, to wit: "A cushion should be placed between the rail and the concrete body of the tie to avoid disintegration of the concrete through impact or vibration." One other condition must also be added, that of a low cost per year of service in track, a condition which must be applied with equal rigidity in considering the use of treated timber, steel ties, or any other substitute for the untreated timber tie. For although the available supply of timber in this country is being rapidly depleted, the common untreated timber tie will be used as long as no substitute for it shows a lower cost per year of service. Even with the commonly accepted economy of treated timber its use is not nearly as general as the demonstrable economy would justify. As a consequence, the inventor of a concrete tie fulfilling all the requirements given in the above quotation must be prepared to demonstrate the economy of his tie with the same assurance that he is prepared to argue for its mechanical perfection.

## HAVE WE LEARNED THE LESSON?

THE WISE MAN builds on the experience of the past to avoid pitfalls of the future. Will the railways profit by their experiences of the last two years in their handling of the labor problem or will they revert to the objectionable practices of the past, now that a surplus of men is temporarily in sight? A few years ago when men were plentiful and looking for work, the roads gave little or no thought to the care of their maintenance of way laborers, but as this surplus turned into a shortage of continually increasing acuteness, more thought was given to camp improvements and other features long recognized as desirable and which assisted in securing and holding men. As a result greater progress was made in the care of this class of labor during the last two years than in any previous ten. Now that this crisis has passed, there is a tendency in some quarters to discard these measures as no longer necessary and revert to the old practices. It is to be hoped that this attitude will not become universal, for it will indicate an entire failure to appreciate present day progress.

The railways in common with other large employers of labor bear a responsibility to this country in promoting proper standards of living among those of their employees dependent on them for such accommodations. Public opinion is developing rapidly in this respect and the roads cannot afford to ignore it. The vermin-infested box car, the crooked labor agent, and the grafting commissary are outlawed and the road which fosters or tolerates them should be forced by legislation. if necessary, to abandon such practices. Potent as the argument of responsibility for citizenship may be, it does not constitute the strongest reason for providing proper living conditions. Such should be provided because they pay and pay handsomely. Even in times of labor surplus when men are seeking work they endeavor to secure the best possible working conditions and the road or the camp with the best reputation has a wider selection of men than one less favorably known. In times when men are scarce such facilities are essential, for men will not remain in a poor camp if a better one is available.

The acute shortage of the railways last year was not the result of recent conditions alone. It was brought about to a great degree by influences which had been present during preceding years and which had caused many men to leave railway work permanently or to accept it only as a last resort. It is to be hoped that the influences which have recently been eliminated will not be permitted to return. Even though the roads may be able to secure all of the men needed this year, this fact should not lull them into any false sense of security, for history repeats itself and history has shown that shortages of labor confront the roads at each recurring period of industrial activity. Many indications point to an early return of business activity this year. Therefore, it is particularly important that we should not forget any of the lessons we have learned, but should build on these to greater advances in order that maintenance of way work may come to be regarded as desirable and attractive as it was 20 years ago.

## CAN GOVERNMENT AGENCIES RECRUIT LABOR?

HOW WILL RAILWAY labor be recruited in 1919? This question was the subject for discussion at the labor recruiting conference held at Chicago on January 20 and 21. Called by officers of the United States Employment Service with invitations to interested railroad men, it was hoped that some agreement would be reached whereby the employment service could become the official agent of the railways in recruiting men.

In the transactions of this conference which are reported on another page of this issue it was apparent that this proposition was contingent in a measure upon a perpetuation of the present form of government control of the railroads, but the plan as presented by the officers of the employment service would not be entirely inconsistent with private management of the roads. Nevertheless, the practicability of this plan of securing an adequate supply of labor was questioned by the railroad men present, who remembered too well the experiences with federal agencies during the past year while overlooking the possibility of improvement in the conduct of these agencies since the signing of the armistice which has removed a large part of the burden placed upon them. The employment officers, on the other hand, were inclined to recite the abuses and shortcomings of railway practices in handling their own labor, little realizing that the roads have overcome most of these objectionable features in the course of their terrific struggle with the labor problem during the last two years.

The question under discussion resolved itself into a comparison of the relative merits of two distinct plans, namely, the socialistic or paternalistic plan, as compared to the individualistic method. Under the first there are the advantages of unified control, elimination of the incentive for exploitation and a means of balancing a surplus of labor in one locality against a shortage in another, with the further advantage to the laborer in that he is furnished a single agency through which he is enabled to learn where he may secure work without the endless door to door solicitation. The successful fulfillment of these advantages implies a degree of efficiency and effectiveness rarely obtained under governmental functioning because of the disadvantages inherent to such organizations, as, for instance, lack of initiative and adaptability, excess of red tape and high cost of operation. (The United States Employment Service has asked Congress for an appropriation of over $11,000,000 for the coming year.) Aside from the disadvantages of governmental operation are those consequent to the very magnitude of any utility great enough to care for the labor needs of the entire country. Like any proponderous body, its movement would be slow, while its complexity would lead to confusion.

Under the plan of individual solicitation by the separate railroads there are all the advantages that accrue from individuality. An organization with initiative, energy and perseverance will get the men if they are to be

had. With a reputaton for good camps and good treatment of its men a road will be enabled to get full advantage of this condition if its own labor agents can call special attention to this excellent policy. The disadvantages of this method are two-fold—competition between individuals for the available supply of labor and the opportunities offered for the exploitation of the men. The latter have been largely overcome during the last two years by the elimination of the fee agencies.

A consideration of the advantage and disadvantages of public and private operation of the employment agencies will disclose the fact that they present a distinct parallel to the arguments for and against government operation of public utilities and for that reason should bring forth the fact that private control with public regulation is better than public operation. With labor agencies operated by the individual railroads solely to obtain men and *not for profit*, it will be possible to secure all the advantages of individual initiative and if these agencies are subjected to some form of regulation by the government the possibility of objectionable practices creeping in should be readily removed.

## ZINC TREATED TIES AND AUTOMATIC SIGNALS

THE FACT THAT ties treated with zinc chloride will cause interference with automatic signals under certain conditions has been recognized by track and signal men for years. It has been equally well known that this trouble can be avoided by the adoption of certain relatively simple precautions. Yet after years of experience with the successful use of ties treated in this manner and installed in tracks equipped with automatic signals on some of the largest systems of the country, an agitation was started recently which had for its purpose the universal prohibition of such ties in signalled tracks. This agitation was brought about by the experience of an earstern road following a derailment last spring, after which it was necessary to replace 2,580 damaged ties by new ones freshly treated with zinc chloride and laid out of face. Trouble was experienced at once with excessive current leakage from the automatic signal circuits and the cost of maintaining these circuits mounted rapidly.

Although zinc chloride has been employed as a timber preservative for many years, its use has been confined largely to the roads in the Central and far West and creosote has been employed generally in the east. The war shut off the importation of creosote and greatly curtailed the supply so that it was necessary for a number of roads in the east and elsewhere to turn to zinc chloride for the first time. It is for this reason that its value as well as its limitations should be understood in order that no hasty and ill-advised action shall be taken and that full benefit should be secured from the experience gained on other roads. This has led to the investigation abstracted on another page in this issue, in which it is shown that ties treated with this preservatve have been used without difficulty in connection with automatc signals.

The Union Pacific has installed ties treated with zinc chloride in large numbers for many years. This road has also been a pioneer in the installation of automatic signals. No difficulty has been encountered on this road where proper precautions have been observed. Among the measures which may well be taken are the seasoning of the ties after treatment to enable the free preservative to evaporate, the spotting of the ties in track in limited quantities (the maximum number in any signalled section being limited to 12½ per cent on one road) and the maintenance of a clear space between the base of the rail and the ballast. With such precautions no trouble need be experienced.

# LETTERS TO THE EDITOR

## THE PLIGHT OF THE TRACK FOREMAN

Blind Siding, Pa.

TO THE EDITOR:

We have just been instructed to work only 8 hours per day because the laborers have been advanced from 36 cents to 40 cents per hour, with time and one-half time after the 8 hours, effective September 1, 1918. Hourly employees also are given time and one-half for Sundays and holidays. This includes assistant foremen who are now paid more than section foremen. Now the foremen will be reduced to 8 hours per day, with no pay for Sundays and time and one-half only after 10 hours.

This application of the wage order is in accordance with interpretation No. 1 of Supplement No. 8 to General Order No. 27, for monthly men were not paid time and one-half for overtime before January 1, 1918, while the men were. As a result, we are now working for less than assistant foremen, receiving a little over $100 per month, with all of the responsibility and with all the clerical work which we have to do on our own time, etc. Is this just?

Common labor in this vicinity is paid a minimum wage of 51½ cents per hour in other industries, working a minimum of 9 hours per day. Car inspectors or car repairers on this railroad receive 58 cents per hour and time and one-half for overtime after 8 hours, and work a minimum of 9 hours per day. Why should we be singled out and a maximum established for us when there is no maximum for other employees?

We are glad to work 8 hours per day, but we should first receive enough to make a living. Consider the cost of living and see if an employee receiving $3.20 per day can support a family in the eastern states today.

Many sections are and have been without men. Many more will lose those which they have before next summer. Those remaining are indifferent and careless. Because of this the railroads are spending more in the end for this work than would be necessary if better men were held in the service. This is borne out by the experience of the R. F. & P., described on page 5 of the January issue of the *Railway Maintenance Engineer*.

PAUL PEZZUTI,
Track Foreman.

## NEW BOOKS

**Structural Engineers' Handbook** (Second Edition). By Milo S. Ketchum, Dean of the College of Engineering, University of Colorado. 6 in. by 9 in., 928 pages, illustrated. Bound in flexible leather. Published by McGraw-Hill Book Company, 239 West Thirty-ninth Street, New York. Price $5.

Including the first thousand of this second edition, 13,000 copies of this book have been published. The object of this text is to give the designer and detailer of structural steel, in one volume, practically all of the information found in the usual structural steel handbook in addition to a compendium of design data and detailed information concerning a great many types of steel structures. The material is arranged in such a way as to become readily available and is attractively illustrated. New information in this edition includes data on steel windows and doors, cement and gypsum tile roofs, analyses of the stresses in stiff frames, etc. While somewhat apart from the question of design, one of the most valuable chapters is that on erection and erection equipment.

*One of the Standard Camps*

# WELFARE WORK AMONG MAINTENANCE MEN

## Pennsylvania Railroad's Educational Courses and Modern Camps Are Typical of Americanization Methods Which Are Bringing Results

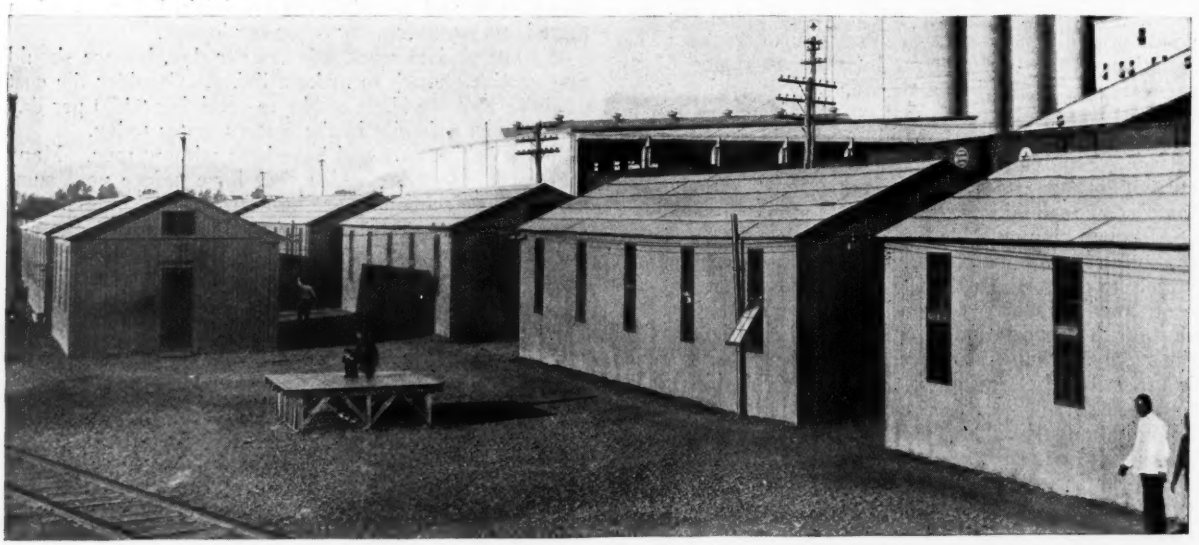
ON MOST RAILROADS in this country a large number of the laborers employed in the maintenance of way forces are foreign born. When entering this service they are generally unable to read, write or understand the English language and are what might be termed "floaters," having no permanent home ties in this country at least. How to retain men of this character permanently in the service and to develop them into efficient employees is a problem of ever increasing importance both to the railroad and the country.

On its lines east of Pittsburgh and Erie the Pennsylvania alone employs more than 33,000 foreigners in normal times, the great majority of whom are maintenance of way laborers. Some of the methods followed by this road in developing the men and the steps taken to provide them with comfortable and attractive surroundings with the object of insuring continuity of their services are outlined below.

Citizens of 47 foreign nations are represented in the forces of the maintenance department of the Pennsylvania. Of these races the Italian predominates in numbers, there being at present approximately 8,000 in the service. Since the beginning of the war Mexicans have been recruited extensively to replace in some degree the great number of European laborers who returned to their respective countries to take part in the war, and at present more than 500 are employed.

### Italians Predominate

Because of the preponderance in numbers of the Italians and the impracticability of recruiting labor from European sources during the war, particular attention has been given on this road to the development of Italians and Mexicans. This development plan has consisted chiefly of educational work involving courses in Italian-English, Mexican-English and mathematics, carried out by correspondence.



**Camp for Negroes at Girard Point, Philadelphia, Pa.**

The primary object of these courses is to promote the efficiency of the men and they have been so planned that in teaching the men English in order that they may understand the directions of their foremen, they also gain a comprehensive knowledge of the tools and supplies with which they come in contact in their every day work.

Up to the present time 15 lessons or pamphlets in Italian-

English and 5 on mathematics have been issued. The Mexican-English course is similar to the Italian-English and but six of these lessons have been issued, owing to the fact that Mexicans have not been employed extensively until recently. The correspondence courses are supplemented from time to time by lectures, stereopticon views and moving pictures, all dealing with practical subjects such as safety first, proper methods of work, and the advantage of proper living.

**One of the Mess Halls**

The first three lessons of the language courses are elementary, consisting of a study of the alphabet, vowels, diphthongs, pronunciation of consonants in English with imitation in Italian, elementary exercises with vocabularies in English and Italian of the words to be used with each exercise and the formation of sentences. In these exercises the abstract terms used have chiefly to do with tools and other railway equipment or supplies, knowledge of which will be of the greatest value to the laborer in his every day work. This same feature is carried through lessons 4 to 9, in which, in addition to the English equivalent, the laborers are instructed in the use of tools and other equipment as well as the proper methods of carrying on the work. These last pamphlets are liberally illustrated, tools and the methods of their use being shown. Pamphlet No. 11 treats of naturalization exclusively and contains all the information necessary to pass a government examination for naturalization.

**A Recreation Room**

The purpose of lesson No. 12 is to teach the laborer the laws of health. It treats on the importance of proper food and temperance in eating as well as the securing of regular rest. It emphasizes the importance of cleanliness of the body, teeth and clothes as well as in the living quarters. The evils of the spitting habit and the use of alcohol and tobacco are also discussed and considerable information as to first aid is given.

Briefly summed up, lessons 1 to 12, inclusive, have been planned to give the laborer a reasonable knowledge of English in general, a particular knowledge of practical subjects and general information on subjects such as the laws of health, sanitation, and of other topics, a knowledge of which is thought to be essential to the students' welfare. These lessons also furnish the necessary ground work for the succeeding ones, which are designed to give the student a semi-technical knowledge of frogs, switches, guard rails, switch connections, ties and other track material.

Lesson No. 13 treats of the component parts of frogs, switches and guard rails, the information being conveyed in a graphical manner by the use of photographs, which are also freely used in connection with drawings in lessons 14 and 15.

Lesson No. 14 treats exclusively of ties, presenting information on inspection and selection, proper methods of handling and piling, methods of placing in track, rules for spiking on tangents and on curves, and the method of tie renewals and removals. This pamphlet carries a full-page illustration devoted to the standard branding for accepted ties, with the information set forth both in English and Italian.

**In the Office—the Medicine Chest**

Lesson 15 presents valuable information as to joints, both plain and insulated, as well as methods of spacing them in track. The expansion and contraction feature of steel rails is discussed and information is given in reference to spacing rails at different temperatures. The use of anti-creepers and tie plates is touched on and several pages with numerous illustrations are devoted to rail failures and their causes.

The course in mathematics is prepared on the assumption that the student has already secured a working knowledge of English and the lessons are all given in that language. The pamphlets issued up to the present have a range from elementary arithmetic to ratio and proportion.

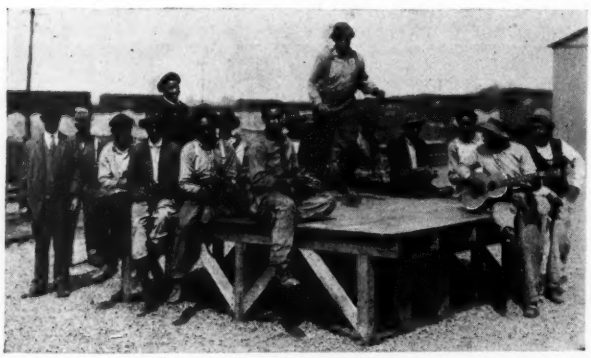
Introduced primarily to promote the efficiency of the laborer, these courses have been found also to furnish the incentive toward higher standards of living and for naturalization and the personal attention given to the work

of the students submitting answers to the questions given at the close of each lesson enables the director of the courses to detect students who apparently are out of the ordinary. These leads are followed up by personal visits and the men warranting it are given special attention, with the result that in many instances students have been promoted to positions as assistant foremen, foremen or clerks.

### The Camps

The camps which have been provided for the housing of these employees are modern in all respects. They are outfitted with features to promote sanitation and health. Provision has also been made for the amusement of the men. Several of these camps are located in the vicinity of Philadelphia, Pa., and are typical of others at various points along the line.

At Philadelphia both standard camps and remodeled buildings are utilized. The standard camps are located in the outskirts of the city where space is available, but closer into the business section they are impractical and converted buildings are utilized. The interiors of these



**Provided Especially for the Darky**

are arranged to secure the maximum comfort of the men and contain sleeping quarters, kitchen and dining room facilities, baths, toilets and recreation rooms.

One of the photographs shows a standard camp and its surroundings. The buildings include the bunk houses, a camp kitchen and dining room under one roof, a combination office and commissary building, shower bath and toilet facilities, a boiler house for supplying hot water, a laundry for the use of the men in washing their clothes and the recreation building.

In all of the camps the recreation rooms serve in the evenings as meeting places for the men and phonographs, games and magazines are supplied for their entertainment. In addition these rooms are used as lecture rooms in connection with the educational courses and for instructive entertainments given from time to time under the auspices of the Young Men's Christian Association.

It is the policy of the road to furnish free medical attention to the men and all of the camps are equipped to give first aid. These outfits are in charge of the camp superintendent and in the outlying camps remote from doctors are very liberally stocked. Such an outfit is shown in one of the photographs.

Each camp is thoroughly cleaned and disinfected every day under the direction of the superintendent and the sleeping quarters and bedding are aired. The bedding is furnished by the company and the sheets and pillow cases, both of white material, are changed weekly and sent to a laundry.

New arrivals at camp are allowed to store their belongings in the office until they have been assigned quarters in the bunk rooms, where individual lockers are supplied. As they arrive, the men are furnished with individual towels and soap, which are also kept in the lockers. Receptacles for the collection of soiled towels are supplied and no accumulation of soiled clothes of any kind is allowed.

One of the important features of all the camps is the commissaries, which are stocked with clothing, shoes, gloves, tobacco, etc. All supplies are issued to the men without the passing of money, the company deducting from the payroll all bills owing. This feature makes it possible for the men arriving in camp lacking suitable clothes to outfit themselves without waiting for a pay day, and, with the exception of tobacco and similar articles, which are sold at the retail price, the men are given the benefit of quantity purchases.

The kitchens are in charge of competent chefs working under the direction of the camp superintendents, who order all supplies and are responsible for maintaining balanced rations in making up the menus, in which the individual tastes of the men are catered to as far as practical. Supplies for the kitchen are the best which can be secured and the meals are served at cost. The tables in the dining rooms are covered with white oilcloth and the dishes are of enamelware.

Aside from the benefits accruing to the men from the opportunity of following out the educational courses while living in surroundings that bring home to them the advantages of higher standards of living and the practical advantages secured to the railroad through the increased efficiency of the men and a reduction in the labor turn over, this welfare work has been justified as an Americanization project. In August, 1918, a census taken of the employees on the lines east of Pittsburgh disclosed the fact that a total of 24,674 men of foreign birth were employed. Of these 9,429 had been fully naturalized, 4,304 had taken out their first papers and 4,475 had indicated their intention of making application for naturalization.

## THE AMERICAN RAILROAD ASSOCIATION

AN AMALGAMATION of various railroad associations has been accomplished through an order of the director general of railroads, dated January 10, and known as Circular No. 70. Under this arrangement the former activities of the American Railway Association, the American Railway Master Mechanics Association, the Association of Railway Telegraph Superintendents, the Association of Transportation and Car Accounting Officers, the Freight Claim Association, the Master Car Builders Association, the Railway Signal Association and the Railway Storekeepers Association will be conducted under the direction of a new association known as the American Railroad Association. This organization will include five sections, namely: Section 1, operating; Section 2, engineering; Section 3, mechanical; Section 4, traffic, and Section 5, transportation. While provision is made for an engineering section, the American Railway Engineering Association is not a party to the amalgamation, although it will co-operate closely in all matters of an engineering nature. No action has been taken regarding the smaller organizations such as the Roadmasters or the Bridge and Building associations. This amalgamation will have no effect on the March convention of the American Railway Engineering Association or the exhibit of the National Railway Appliances Association.

# THE LABOR OUTLOOK FOR THE COMING YEAR

## Past and Present Conditions in Relation to Future Prospects and the Influence of Federal Supervision

BY HUGH REID,
United States Department of Labor, Washington, D. C.

THERE NEVER WAS a time when we could gage the future of our labor supply less accurately than we can today. The situation is so kaleidoscopic that changes in supply and demand reverse the market conditions over night. The sudden ending of the war is causing the liquidation of many concerns devoted exclusively to war work, and the renewed activity of many industries which have been closed down or which were operating upon a curtailed basis during the war. So fluid has the whole general situation become that the amount of change now occurring in a single week is as great as that taking place in a six-week period last year.

Before attempting to forecast the labor supply, let us see if it is possible to forecast the demand. There is no doubt that next summer will see an unprecedented revival of industry. The basic conditions are very sound. The industries which were restricted during the war were reduced because of the necessity to use their facilities for making war material and not because there was any curtailment of civilian demand. That demand still exists, and there is an enormous purchasing power awaiting the resumption of non-war production. The chief limitations on those industries arose through the curtailment of raw materials and a restriction on over credits to non-essential industries. Both raw materials and credits have now been released. The chances, therefore, are that we shall have a very prosperous season, although it is quite likely that we shall have a sharp period of readjustment. Such a period of prosperity will not help the railroads, however, in so far as their labor problems are concerned, because a prosperous condition of industry not only adds to the volume of service to be rendered by the railroads, but also withdraws part of the labor supply. Speaking in general terms, then, during the short and sharp period of readjustment, the railroads may have a reasonably large supply of unskilled labor at their disposal, but they will undoubtedly face a shortage next summer.

The present condition of the labor market and the probable conditions in the near future may be gaged by the appended table which is based upon weekly telegraph reports from a very large number of industrial concerns.

| Report for Week Ending | Concerns Reporting | Cities Reporting | Cities Reporting Shortage of Labor | Cities Reporting Surplus of Labor | Cities Reporting Equal Supply and Demand |
|---|---|---|---|---|---|
| Nov. 26 | 2,230 | 47 | 20 | 2 | 25 |
| Dec. 3 | 5,671 | 113 | 28 | 11 | 74 |
| Dec. 10 | 6,507 | 122 | 31 | 16 | 75 |
| Dec. 17 | 6,779 | 122 | 27 | 22 | 73 |
| Dec. 24 | 6,738 | 120 | 22 | 37 | 61 |
| Dec. 31 | 6,669 | 120 | 25 | 38 | 57 |
| Jan. 7 | 6,764 | 121 | 23 | 43 | 55 |
| Jan. 14 | 6,614 | 120 | 22 | 46 | 52 |

A cursory glance at this table might lead one to assume that there will shortly be a bountiful supply. A detailed analysis of certain factors which do not appear on the face of the tables, however, will soon nullify this deduction. The greater number of those who are recorded as surplus workers are men of relatively high skill. Beginning early last year, we developed a very serious shortage in the unskilled field, which has proved very embarrassing to the railroads and to the farms. By mid-summer of 1918, we had a distinct national shortage of 500,000 men, which probably approximated nearly a million by fall. The chief cause of this shortage lies in the fact that our normal supply has been almost wholly cut off for nearly four years.

### IMMIGRATION CUT OFF

Beginning early in the present century, a steadily increasing stream of immigration has been flowing to our shores, and this supply has constituted the common labor for the country. As one wave has acquired skill, it has been replaced by another unskilled wave behind it. During the last generation, immigration, which constitutes our normal unskilled labor supply, had reached enormous proportions. In 1900, for instance, the number was 448,572. By 1905 it had reached 1,026,499, where it held fairly steady up to and including 1910, when the number was 1,041,570. It then took another upward slant, reaching the enormous figure of 1,218,480 in 1914, when the European war broke out. The following year it had dropped to a trifle over 300,000, a figure which was only slightly lowered in 1916 and 1917. During the year just ended, however, our total immigration was only 110,618. With one exception, this is the lowest figure for seventy-five years. Only once, and that during the Civil war, has immigration fallen so low since 1845. Since the beginning of the European war our loss through immigration curtailment is over 2,000,000.

Coincident with this failure of immigration during the war, there has been an increase in emigration. Even as late as 1917, for instance, in spite of a decrease in immigration, there was a net gain to the population of 216,498. In 1918, although we received, as I have indicated, over 100,000 immigrants, nearly three-fourths as many left our shores, so that our net increase from immigration was only 18,585. We are practically at a standstill.

Analyzing these figures further, we find from previous weekly figures on labor supply, that the situation is particularly disheartening with respect to unskilled labor. During the past year 76,643 unskilled workers left America either temporarily or permanently, and only 56,875 entered. From the standpoint of unskilled labor, we have a definite loss of 20,000 instead of the previous enormous gain.

To correct this situation during the present year, five sources of labor are being suggested, including several used during the past year. They are as follows: (1) the importation of Mexicans, (2) the recruiting of Porto Ricans or other American citizens not on the mainland, (3) the more general employment of women, (4) demobilization of the army and (5) better distribution of labor within the United States.

With respect to the first of these, the importation of Mexicans, we must not be too optimistic. During the past year the Department of Labor under certain emergency powers of the Secretary, removed a great many of the restrictions upon illiterate persons, but even under those circumstances a very slight migration from Mexico resulted. The improvement of conditions in Mexico and the suspicion which the peon has for the American have been cited as reasons for failure at this source. But whatever the cause is, the fact remains that it has failed and the situation as far as Mexico is concerned does not seem very promising.

With regard to Porto Ricans, the situation is somewhat more hopeful. Large numbers of these islanders were brought in last year by the Department of Labor and were used mainly by the construction division of the army. But as far as the railroads are concerned, it is probably a wise thing to wipe this prospect off the books. Porto Rican laborers can only be used in certain climates and under much better working conditions than can be provided for in an emergency. Many years of underfeeding have made a majority of the islanders victums to anæmia and they are peculiarly susceptible to climatic strain. This was shown in the experience of the army and there was much sickness and even an unusual number of deaths. Any direct employment of Porto Ricans on the railroads is probably out of the question. If, however, they can be used upon other employments which will release men of better bodily physique who are better able to withstand climatic conditions, they will have an indirect effect upon the railroad situation.

During the past two or three years, many of the railroads have employed women in some of the more laborious tasks. While there are doubtless many women who will voluntarily undertake the performance of such work, such a policy of employment, although it might give immediate relief, would be a very short-sighted one. The best authorities are unanimous that very few women can undertake such work without disastrous physical consequences.

This brings us to demobilization of the army. At the present time more than a million of the men in military camps in America have been released and 500,000 more will be descharged in the month of February. What effect the demobilization of the balance will have, no one can tell, although there are certain inferences to be drawn. As this article goes to press, demobilization of war workers is only partial. There is one factor which would probably operate to relieve the railroads very largely. Many machine helpers and others who have been operating certain specialized machinery were drawn for the most part from the ranks of unskilled labor and with the cessation of the industries employing them will again become a part of the unskilled supply. There are very few wholly unskilled men in the army, but as skilled men are released they will go back to skilled positions where they will naturally force out, because of superior efficiency, the unskilled or hastily trained men who have taken their places during the war.

### BETTER DISTRIBUTION NECESSARY

This brings us to better distribution. I have stated previously that we had a serious shortage of labor up to the conclusion of the armstice. This is probably actually true as far as numbers are concerned, but a great deal of the shortage was due to maladjustment or bad distribution. There were many men in some communities who were idle the greater part of the year, because we did not know where to find them. The real trouble was that we had no adequate machinery for distribution until very nearly the middle of 1918. If we had possessed such machinery the shortage would have been smaller. Although legal authority to operate a set of employment exchanges had been within the scope of the Department of Labor for five years, Congress had previously refused to grant any money for its operation. During the war, however, such exchanges were set up and rapidly extended, so that we have at present approximately 800 throughout the United States. These have been reinforced during the past few months by approximately 1,500 community boards, which keep intimate track of labor supply and demand in the various communities. From the standpoint of knowing where labor is, and where it it needed, we are tenfold better equipped than we were last year.

There is every reason to believe that with the large number of men still to be discharged from the army, together with the saving which better distribution will give us, we shall overcome the present shortage, but it will require the closest co-operation between the regional directors of the railroads and the employment service. If this is achieved, there is no reason to anticipate difficulty.

The railroads should make a decided effort to estimate wage rates in advance. A great deal of the trouble last year arose from a lack of knowledge of current wage rates. Many of the roads were offering 27 cents per hour at a time when the lowest wage offered by anyone else in America was 30 cents.

There is a tendency on the part of some employers to anticipate a sharp decrease in wages in the near future. Labor men and shrewd economic observers are unanimous that there will be no tendency for lowering of wages for some years to come. Whether or not we have a short period of employment or not, next summer is going to see our peace industries in full blast and the needs of foreign reconstruction and delayed building at home will protract such prosperity for a long time. While temporary reductions in skilled trades might come during the very short readjustment period, corresponding increases would be inevitable later on. Any changes in wage scales or limiting of needed repairs or maintenance are poor economy at present. This holds good for both organized and unorganized labor. The latter has experienced the greater proportionate advance during the war and can only be reduced through competition. During the next year the demand of the farms and the normal industrial requiremnts will keep present wage rates high until after the harvest at least.

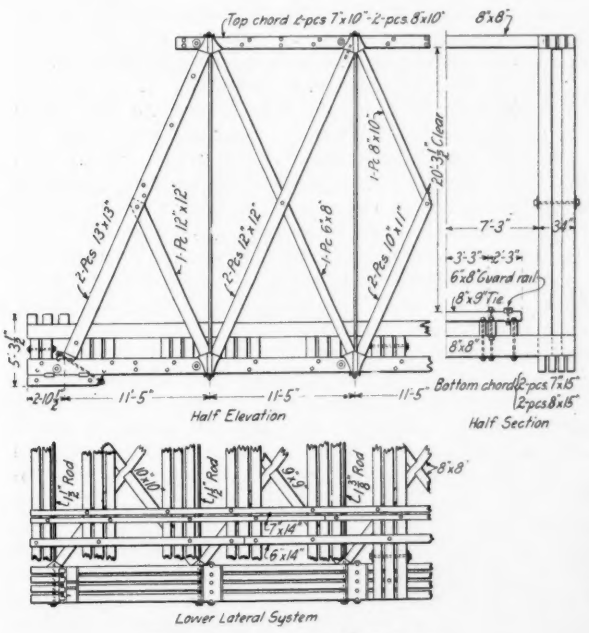
The situation with respect to maintenance of way conditions depends largely upon team work between the Federal Department of Labor and the railroads. During the last year there was a great difference of opinion in railroad circles as to the value of the Federal exchanges. This arose in part because the exchanges themselves were new and consequently not quite as efficent as they might have been. There seems to be a general feeling of confidence in them now, and plans are under way for a pooling of interests and a centralization of employment through the Railroad Administration. By the time this paper is published a conference will have been held by the regional directors of the railways and the United States Employment Service for the formulation of a definite scheme of centralized employment. The probable outcome of this conference is the extension of a recently organized division to handle railroad labor only. Chicago seems

to be the natural headquarters for such work, as it furnishes the largest market for unskilled labor in the United States.

The present plans indicate that the present Chicago office of the Railroad division will become the center through which the railroad divisions of all other employment exchanges shall make their clearances. The whole organization will be in the hands of practical railroad men and Sanford Freund, an officer of the Great Northern, will be in general charge for the Department of Labor. We are thus assured of team work and team work is hard to beat.

# Strengthening Howe Truss Spans

IN THE RECENT past, with its scarcity of iron and steel either in the form of plain material or finished products, the greater adaption of Howe truss bridges to modern railroad conditions would have been a most natural tendency had it not been for difficulty in securing the hardware. In the renewal of these structures, of course, the old hardware is reused wherever practicable, but difficulty arose when it was necessary to modify the design of the structure as required to provide for heavier loading.




**Details of a Remodeled Span**

This difficulty was overcome by the Northern Pacific in preparing new designs for Howe trusses, by keeping the sizes of timbers, chord packing and all principal hardware the same as in the older designs of longer span lengths. Thus material released from old bridges has been reused in new structures designed to carry heavier loads. In other cases, old structures have been placed on falsework and the hardware of the span reused at the same site in a new span of shorter length.

As an illustration of this procedure, the South Bend branch of the Northern Pacific was built in 1891 and a number of Howe truss spans were constructed with hardware new at that time. These spans had been rebuilt three different times, using new timber with the old hardware. The designs were equivalent to about Cooper's E 28 and until 1903 carried locomotives that weighed not exceeding 100 tons. Since that time a number of locomotives have been used weighing 165 tons as well as flat cars loaded with logs which in some cases exceeded the engine loading. As a consequence, in renewing these structures for the fourth time, it has been found advisable to strengthen them while still using all the old hardware with the exception of the bolts and miscellaneous broken castings by shortening the spans. Some 150-ft. spans have been shortened to 105 ft. and 120-ft. spans to 85 ft. The same depth of trusses and the same panel lengths are used as in the old structures, but the 150-ft. span is reduced from 13 panels of 11 ft. 1 in. to 9 panels of the same length, while the 120-ft. spans have been reduced from 10 panels of 11 ft. 5 in. to 7 panels of the same length.

The only change made in the chords is in the length of the members, the packing and splicing being otherwise the same. The sizes of web members, both timber and rods, are kept substantially the same as those in the old design, commencing with the members at the ends of the span.

The principal change made in the new design is in the floor system. In order to eliminate flexure as far as possible from the chords carrying the track loading, the floor beams have been bunched as near as possible to the panel points. The same number of floor beams are used as in the older designs but 10-in. by 20-in. pieces are used instead of 10-in. by 18-in. The heavier loading and the increased span in the stringers produced by this bunching of the floor beams necessitates larger stringers. Thus there are two 7-in. by 14-in. main stringers under each rail with 6-in. by 14-in. jack stringers in the new designs in place of 5-in. by 12-in. stringers in the same

**The Chehalis River Bridge**

arrangement in the old design. The ties also have been increased in size from 8 in. by 8 in. to 8 in. by 9 in. to give greater strength.

The removal of the old trusses and the construction of the new ones involved no departure from common practice in this kind of work. All of the trusses were framed, fitted up complete and match marked for erection at a framing yard adjacent to the bridge. All second-hand material except the castings was painted one coat of pure boiled linseed oil before reuse. The old castings were all carefully inspected to eliminate any defective material.

This work has been done under the general direction of M. F. Clements, bridge engineer of the Northern Pacific.

# Can Government Agencies Secure Railway Labor?

THE ABILITY of the Federal Employment Service to recruit the labor required by the maintenance of way departments of the railways was questioned by representatives of the roads, at a two days' conference with officers of the government service in Chicago, on January 20 and 21. The meeting was attended by about 25 railway men and an equal number of representatives of the various departments of the Federal Employment Service. Sanford H. E. Freund, director of the clearance division of the United States Employment Service, Washington, D. C., and formerly assistant general solicitor of the Great Northern at St. Paul, presided and took an active part in the discussion.

The meeting was called at the suggestion of the Employment Bureau for the purpose of developing a tangible method of co-operation between the officers of the railroads and those of the Employment Service in recruiting labor. Owing to the fact that the viewpoints of the two parties at this conference were decidedly at variance at times, the topics under discussion frequently became the subject of spirited controversy, which brought out much interesting information. The meeting bore fruit in the form of a resolution recommending action by the director-general of the railroads and the director-general of the Federal Employment Service, directed towards the development of a co-operative policy.

The position taken by the representatives of the employment service was that while there was a surplus of labor at the present time, there was every reason to believe that there would be a decided shortage during the working season of 1919, particularly with respect to common labor. The principal reason assigned for this conclusion was that the falling off of immigration during the years of the war had produced a definite shortage of 2,000,000 men of the classes ordinarily employed in common labor, whereas men released from the army and war industries were not inclined to take up work of the kind done by the common laborer. Assuming that the shortage will be acute, it was the contention that the problem of the employer under these conditions would be so severe as positively to require the assistance of a centralized agency for the recruiting and distribution of the available supply of common labor.

In outlining this idea at the opening of the meeting, Mr. Freund urged upon the railroad men the necessity of co-operating with the 750 government employment agencies now in existence. He said that competition between the federal bureaus and those maintained by the railroads would be harmful to both and would increase the labor turnover.

In speaking for the railroads, W. G. Beird, federal manager of the Chicago & Alton, agreed that the railroad situation was grave, especially with respect to unskilled labor. A particularly unfortunate feature in this connection is that labor is far less efficient than formerly and one of the most important problems is to restore it to its former efficiency. Later, after listening to the discussion, Mr. Bierd said that it was his opinion that there was a missing link between the organizations of the Federal Employment Service and the Railroad Administration and that he believed it should be the sense of this meeting to call upon the United States Railroad Administration to appoint a committee to meet with representatives of the employment service to formulate the necessary means of united action.

Representatives of the different state branches of the Federal Employment Service spoke of the success of their work, quoting figures as to the large number of men for whom they had secured employment. They decried the failure of railroad officers to co-operate with them and assumed a critical attitude concerning the employment practices of the railroads. Exception was taken to this by Robert H. Ford, principal assistant Chicago, Rock Island & Pacific, who reviewed the labor problem of the past few years in detail and called attention to the fact that it is not solely one of searching out the man without a job and putting him to work, but of keeping him at work. This means that the working and living conditions must be favorable. Moreover, the "floater" must be prevented from traveling over the country at the expense of the railroads. He gave as one reason why the federal service was unable to supply enough men to the railroads during the past year, that they were too much concerned with supplying them for other work at higher rates, and cited instances of intense competition between varied independent agencies of the employment service. He also quoted from an order of the regional director of the Western region calling the attention of railroad officers to the fact that the filing of applications for men at the Federal Employment offices did not relieve them of responsibility for an adequate supply of help to conduct their work properly. He presented several recommendations for the improvement of employment service, which, if carried out, he believed would be effective in securing the confidence and co-operation of the railroads. He urged that the United States Employment Service simplify its process of employment, for common labor is now scared away by an excess of examination and red tape. The employment service should also obtain the complete co-operation of all branches of its own organization. The transportation of men back and forth across the country must be stopped. The recruiting of common labor should be separated entirely from that of skilled labor. The state employment agencies should work for the necessary legislation to remove present abuses in employment and vagrancy. Some form of regional control of the railroads' part in employment activities should be provided.

Mr. Freund took exception to some of Mr. Ford's arguments and insisted that the failure of the workman to stay on the job after he is received is the problem of the railroad and implies improved housing and working conditions and adequate wages. Geo. Thompson of the Community Labor Board of the United States Employment Service, Chicago, presented a number of arguments favoring the abolition of the fee offices. James McDermott, employment officer of the Chicago, Milwaukee &

St. Paul, spoke briefly, stating his reasons for opposing this conclusion.

In discussing the distribution and transportation of labor, C. A. Griswold, employment agent of the Chicago & North Western, said that one of the greatest problems to contend with was the natural desire of the men to travel and the fact that agencies are imposed upon by persons who have no desire to take a position, but wish to obtain transportation to some distant point without expense. He suggested that the solution of this problem was to apprehend a few men who have followed this practice and have them arrested and fined.

Mr. Griswold was followed by Mr. H. E. Ballou, who spoke in place of T. E. Pratt of the Chicago, Burlington & Quincy. He related some of the details of the administration of the employment and distribution of men as carried out by the agency of a single railroad and pointed to the multiplicity of details which would be obtained when a single agency was supplying men to all of the railroads in the tributary territory. In the Chicago territory he estimated that this would represent some 110 railway operating divisions and that it would result in serious confusion. In connection with his remarks a question was raised as to the manner of determining when an order for men had been filled, in cases where the order had been placed with a number of different localities. Mr. Ballou's reply to this was that there was no alternative but direct telephonic and telegraphic communication between the officers requiring the labor and the agencies supplying it.

The question of housing was discussed at some length, but was confined for the most part to the criticism by the federal employment officers of the defects of housing as found on the railroads. This referred for the most part to conditions existing some years ago and ignored the improvements made during recent years.

The advisability of centralized supervision of the central western territory was discussed by Mr. Freund and W. J. Towne, assistant general manager of the Chicago & North Western, the latter speaking in place of R. H. Aishton, director of the Northwestern region, whose name appeared on the program. Mr. Freund recited some of the history of the federal employment service, and called attention to the fact that it had been organized as a war emergency measure that was immediately called upon for assistance from all sources. One of the principal difficulties from which it suffered was the lack of any unified organization of labor employment on the part of the government war activities. Conflicting demands were received from various departments which were so urgent that it was necessary to deal with these various calls as they came without much attempt at co-ordination. Under these circumstances the employment service could not render the railroads as much assistance as would have been possible under a more highly developed organization. Under present circumstances he contended that these objections would no longer exist and it would be possible to obtain the advantages of a unified agency for the recruiting and distribution of labor without the disadvantages that had been manifested during the war.

Mr. Towne agreed that centralized control of labor distribution was desirable and favored a movement toward that end, believing it was worth trying. Assuming that centralized supervision must come, the system must be made sufficiently flexible that the railroads would be allowed to employ labor locally without any formality, and that in cases of emergency they should be allowed to ship labor within local limits without extended supervision. The advantages of unification are the standardization of rules and practices and the elimination of duplicate efforts, while the principal disadvantages arise from the tendency for so large an organization to become immobile and slow in operation. In closing, he favored the formulation of some kind of a recommendation to the director general of railroads which would outline a course to pursue. This took definite form in a resolution presented by Mr. Ford after having been submitted to various railway officers. This resolution as passed by the meeting is as follows:

*Resolved*, That it is the sense of the meeting that the Director General of Railroads, the regional directors and the Director General of the United Employment Service be urged to designate representatives, fitted by training and experience, to act on a central committee to co-ordinate activities in recruiting and stabilizing labor to the end that unrestricted competition and duplication of facilities and effort be eliminated.

## RAILWAY BUSINESS ASSOCIATION MEETING AT CHICAGO

THE RAILWAY BUSINESS Association held its annual meeting at the La Salle hotel, Chicago, on Thursday, January 9. Over 200 railway supply men attended the morning and afternoon sessions, while 500 were present at a dinner in the evening. The chief purpose of this meeting was to discuss the changes taking place in the method of purchasing railway supplies under the Railroad Administration and further possible changes to follow a return of the railroads to private control. The principal feature of the morning session was the address of the president, Alba B. Johnson, president of the Baldwin Locomotive Works, Philadelphia, who outlined the problems confronting the association.

Verbal reports were presented by A. L. Humphrey (president, Union Switch & Signal Company, Pittsburgh, Pa.), chairman of the committee on Government Purchasing Policies; W. W. Salmon (president, General Railway Signal Company, Rochester, N. Y.), chairman of the committee on The Railways After the War; and H. H. Westinghouse (chairman, Westinghouse Air Brake Company, Pittsburgh, Pa.), chairman of the committee on Finance and Administration. Following the presentation of the reports of these committees, resolutions were prepared and adopted as follows:

*Contracts.*—If railroad contracts are to protect the government against declines in the cost of production such contracts should also protect the contractor against increases in the cost of production. Whatever the terms, both parties should adhere to contracts. Arbitrary cancellations of orders due to a falling or rising price market tend to demoralize standards of conduct and impair industrial stability.

*Contingent Fees.*—Abolition of contingent fees in compensating sales service is against the public interest as applied to railroad contracts. Compensation depending wholly or partly upon obtaining a contract has become established in this industry because it has been found to promote economy in selling cost. A change to a salary basis will tend to increase overhead and sooner or later show itself in higher prices. We urge upon the President of the United States that he make effective as applied to railroad contracts the policy attributed to him in the announcement of exemption for the War Department, namely, that "the covenant to be inserted in all war supply contracts against the operation of contract brokers and other illegitimate business agents should not be used in such a way as to be harmful to long-established business customs or to curtail industry."

*Elimination of Wholesalers.*—It is injurious to the best interest of the roads and of the public for central purchasing agents to eliminate wholesalers, who in the past have performed a valuable service in handling and carrying supplies and in maintaining competition. The disappearance of numerous small dealers will in the long run mean the concentration of business in the hands of a few large concerns and consequently a tendency toward higher price levels.

*Mechanical Tests.*—It is essential to mechanical progress that the development of railway appliances not yet established in use should be at once resumed with vigor. Tests should be decentralized, so that the several roads may proceed independently as

if under private control, and so that the federal managers in their discretion may admit makers of new appliances to eligibility in specifications.

*Remittances.*—Cordial acknowledgment is due the Railroad Administration for its good offices in bringing about the liquidation of many long over-due accounts for goods delivered to railways. It would be fortunate if one of the achievements of government control might be the installation of methods and conditions insuring prompter remittances. We urge the Railroad Administration to consider: (a) a study of accounting and vouchering as practiced by roads that pay their bills the most promptly and the recommendation of such methods to all of the roads; (b) a study of the problem of providing the several roads with funds out of current receipts with which to meet current bills; (c) the adoption of a standard period for payment, preferably the 30 days of general commerce.

*Prompt Remedial Legislation.*—If Congress at the present session does not enact remedial legislation providing for modified private control of railways, we favor the calling of an extra session for that purpose, and upon the enactment of such legislation the roads should be returned to their owners.

*Additions and Betterments.*—During the period of government control additions and betterments should proceed with vigor and foresightedness. Discretion should be permitted the railway corporations in determining the design and amount of facilities which they will acquire. The government should provide for corporate co-operation in projects.

## A REVIEW OF 1918

INTERESTING statistics on the activities of the railways in various departments were given in the Annual Review Number of the Railway Age, published on January 3, 1919. These figures cover matters of interest to all departments of the railway from a statement of revenues and expenses to a record of the number of men who served in the Army and Navy during the war. A brief summary of some of the more pertinent facts abstracted from this issue is given below.

The operating revenues and operating expenses for 1918 were both much greater than in any previous year. Nevertheless the net income was less than in any year since 1915 and nearly a quarter of a billion dollars less than the annual amout guaranteed to the railroads by the Railroad Control act of March 21, 1918. The table shows a comparison between the operating revenues and expenses for 1917 and the estimated totals for 1918.

| Item. | 1918 | 1917 | Increase or decrease Amount | Per cent |
|---|---|---|---|---|
| Operating revenues... | $4,880,000,000 | $4,043,000,000 | $837,000,000 | 20.7 |
| Operating expenses... | 3,975,000,000 | 2,854,000,000 | 1,121,000,000 | 39.7 |
| Net revenue..... | 905,000,000 | 1,189,000,000 | d 284,000,000 | d23.9 |
| Taxes ..... | 190,000,000 | 180,000,000 | 10,000,000 | 5.6 |
| Net rental balances.. | Dr. 28,000,000 | Dr. 35,000,000 | 7,000,000 | 20.0 |
| Net operating income. | 687,000,000 | 974,000,000 | d 287,000,000 | d29.5 |

d = Decrease.

The most remarkable figure in this table is the increase of over one billion dollars in the operating expenses, or nearly 40 per cent more than 1917 and 67 per cent more than 1916. The increase in wages accounts for considerably more than half of the total increase in the expenses.

Statistics on construction show that only 721.57 miles of new lines were built in the United States during 1918 and only 135.08 miles in Canada. The above figure for the United States is less than for any year since the Civil war. The mileage of second track built in the United States was 681.55, third track 67.95 and fourth or more main tracks 57.43. The mileage of first track is scattered, the longest single piece being 59.7 miles on the Atlantic Coast Line in Florida and the second longest 53 miles on the government railway in Alaska. However, in spite of the small amount of construction of main tracks, large amounts of money were expended for other improvements, primarily engine terminals, yards and shops. But the money thus spent represents less than half of the $550,000,000 that had been authorized to December 31, 1918. Adding the unexpended balance to the minimum possible additional authorizations at least $550,000,000 in improvement work must be done next year.

Any statement of the mileage of new line built in this country during the past year is incomplete without consideration of the fact that more miles of main railway line were abandoned during the year than were built. A total of 1,182.88 miles of main line were taken out of service of which 445.83 miles were abandoned permanently and taken up, 512.68 miles were abandoned permanently but have not yet been taken up and 22.37 miles were abandoned for operating purposes for the period of federal control. In Canada a total of 200.32 miles of main line was also abandoned, this being confined to the Pacific Coast extensions of the Canadian Northern and the Grand Trunk Pacific where two parallel lines were consolidated for a considerable distance.

The total authorization for signals on American railroads in 1918 as recorded at Washington was $16,601,166. New block signals completed in 1918 amounted to 1,831 miles of automatic block signals and 135 miles of manual block or a total of 1,966 miles. Of the total mileage of automatic block signals completed during the year, 1,015 were for single track and 816 for double track. In addition to this, 938 miles of single track and 577 of double track automatic block signaling were under construction during the past year but not completed.

Orders for locomotives received by American manufacturers during the twelve months of 1918 aggregated 4,888 locomotives, of which 2,802 were for use by railroads in the United States and Canada and 2,086 were for shipment to other countries. This compares to total orders of 6,142 in 1917, of which 2,704 were for domestic use and 3,438 were for export. Of the 2,593 locomotives reported as having been ordered for service in the United States, 2,030 were included in the orders for standard locomotives placed by the United States Railroad Administration. Of the locomotives ordered for export 1,404 were for the use of the United States Military Railroads. The total number of locomotives manufactured in 1918 was 6,518, including 3,668 on domestic orders and 2,807 on orders for United States military railroads and other railroads in foreign countries. Of the 2,030 locomotives ordered by the Railroad Administration 721 had been delivered by December 28, 1918.

Freight cars ordered in 1918 totaled 177,317 of which 123,770 were on domestic orders and 43,547 on foreign orders. Of the last number 36,875 were ordered by the Director General of Military Railroads for use in France. The production of freight cars during the past year was 124,708 of which 81,767 were on domestic orders and 42,941 to foreign orders. Of the 100,000 freight cars ordered by the United States Railroad Administration only 11,815 had been delivered up to December 21. Passenger cars ordered during 1918 aggregated 157 of which 131 were for use in this country and 26 for export. However, 1,573 passenger cars were built of which 1,481 were for domestic use and 92 for use on foreign railroads.

Railway men who responded to their country's call during the war numbered approximately 220,000 or 12 out of every 100 men employed on the railroads in the United States. Of this number 71,000 joined the colors during 1917 and the remaining number during 1918. The railroads of Canada, which were subjected to war conditions for a much longer period, contributed 34,000 men. The heaviest contributor of any railroad in the United States was the Pennsylvania System with a total of 24,487. The New York Central system ranks second with 15,374 and the Illinois Central third with 8,775.

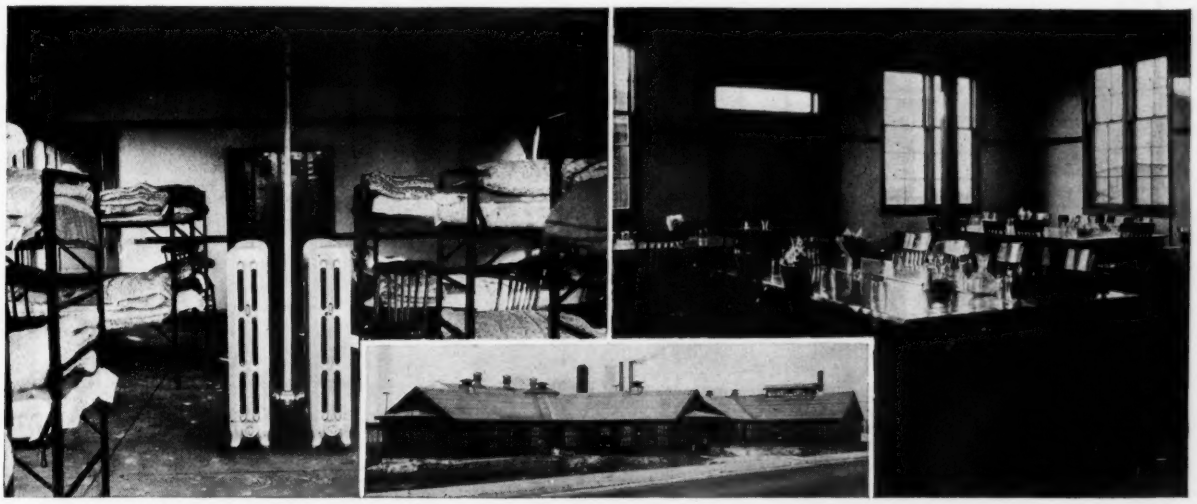
*Camp Mess Building at East Chicago.*

# SOME MODERN CAMPS FOR MAINTENANCE MEN

## Descriptions of New Buildings Provided by Four of the Roads in Chicago District Last Season

THE SHORTAGE of maintenance of way forces, particularly in the track department, during the last two or three years has forced the railways to devote more attention to provision for improved housing facilities as a means of attracting and retaining men in the service. Even though this shortage is now disappearing the advantages of modern camps will remain, for the roads will always be in competition with other industries for the better class of men and it is this type of laborer who appreciates good living accommodations most fully. Furthermore, even though there may be a surplus of labor during the near future this condition will undoubtedly be of relatively short duration. Those roads, therefore, which continue to replace their dilapidated cars and camps with modern facilities will possess the advantage when industrial activity again places the advantage within the hands of the laborer.

A number of roads have studied the design of camps closely during recent years and many modern camps have been built. Four such layouts have been completed in the Chicago Terminal district during the last year and are described below.



**In a Bunk Room** **The East Chicago Camp** **All Ready for Dinner**

### THE BALTIMORE & OHIO CHICAGO TERMINAL CAMP

The Baltimore & Ohio Chicago Terminal Railroad has recently completed and placed in service an unusual design of labor camp at its terminal at East Chicago, Ind. This camp consists of two buildings, a dormitory and a mess hall, although provision has been made for three additional dormitories whenever needed, the dining hall being ample to care for this ultimate development. The cost of the two buildings complete with all equipment is approximately $20,000 and it is estimated that the additional dormitories, each housing 64 men, can be built for about $8,000 each.

The unique feature of this camp is the arrangement of the dormitory or sleeping quarters. This building consists of four wings, each 30 ft. long and 20 ft. wide, grouped about a central section 28 ft. square containing the toilet and wash room facilities. Each wing is designed to house 16 men and has its individual shower baths and toilet facilities in the central section. In this way four different classes of men may be housed in the one building and still be separated as completely as if in different structures. Likewise the amount of space in service at any time may be regulated to the size of the gang, one or more wings being closed as the number of men housed decreases. This arrangement also permits the segregation of not to exceed 16 men in case of an outbreak of a contagious disease without closing the entire building. The value of this arrangement was indicated soon after the camp was opened and before it was filled with track men, when one section was occupied by shop employees, another by negroes and a third with hoboes.

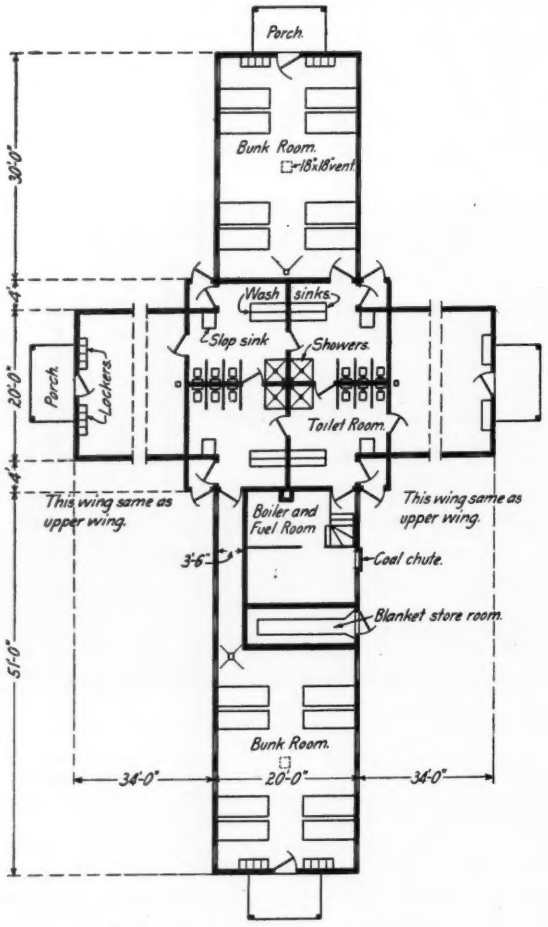
The buildings are of frame construction with concrete floors with six-inch concrete flashing and plaster above. They are electric lighted and provided with steam heat, each building having its individual heating plant. The corners in the flashing are rounded and other measures are taken to promote sanitation. All floors are flushed out daily, drains being installed in the center and connecting with city sewers.

Each wing in the dormity building is provided with eight double-deck bunks, each of which is equipped with a mattress, sheet, double blanket, comforter, pillow and

pillow case. Four steel lockers have been installed in each unit and others will be added as necessary. Hooks are provided on the walls on which the men may hang clothing.

Two steam radiators are installed in the center of the room directly under a ventilator. Eight windows are placed in each unit or one adjacent to each double bunk. Curtains are provided at the windows. Twelve chairs and two tables are installed for the use of the men in their idle hours, a considerable area in the center of the room being available for this purpose.

Entrance to the sleeping unit is gained through a door at the end of the room, opening onto a small covered porch. At the opposite end of the room another door leads into the toilet. It occupies one-fourth of the central section and is for the exclusive use of the men in that unit. There is no connection between these toilet units, except a door provided for the use of the janitor and which is kept locked. In addition to the usual equipment each toilet has a sink with drinking fountain and a

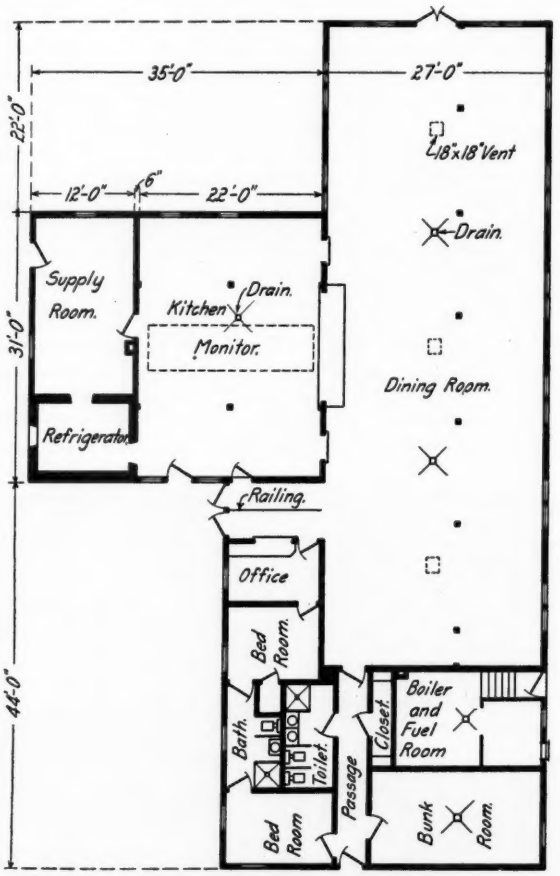



**Floor Plan of the Bunk Building**

shower bath with hot and cold water. A central skylight is provided over the four toilets to afford both light and ventilation.

The mess hall is 74 ft. long by 27 ft. wide and will accommodate 90 men at one time. This capacity can be increased by the addition of another wing opposite the kitchen whenever conditions demand. The different classes of laborers are segregated by portable partitions, which can be moved back and forth to suit the conditions. Wooden tables are provided, covered with white oilcloth. A double entrance eliminates interference between men coming in and those leaving the room and facilitates checking by the office counter.

The kitchen is located in a wing opposite the center of the dining room and adjacent to the street to facilitate the receipt of supplies. There is no door connecting with the dining room, but all food and dishes are passed over




**The Mess Hall and Kitchen Building**

a counter. The kitchen is provided with an army range, burning soft coal, and with a steam table heated by hot water coils. A monitor is installed in the ceiling for ventilation.

The supply room and refrigerator are located adjacent to the kitchen, the former having an outside entrance to eliminate the necessity of carrying supplies through the kitchen. Quarters for the steward and other employees, with baths, closets, etc., are provided in a separatie section at one end of the building away from the kitchen and supply room.

The camp is operated directly by the railroad company and is in charge of a steward, who reports to the operating department. No attempt is made to earn a profit, but an effort is made to meet all running and overhead expenses. Company employees are furnished individual meals or weekly coupon books on the recommendation of the timekeeper as desired. A force consisting of one chef, one second cook, one dishwasher and one baker has been found sufficient to feed 120 men.

This camp has been designed and built under the direction of G. P. Palmer, engineer maintenace and construction, Baltimore & Ohio Chicago Terminal.

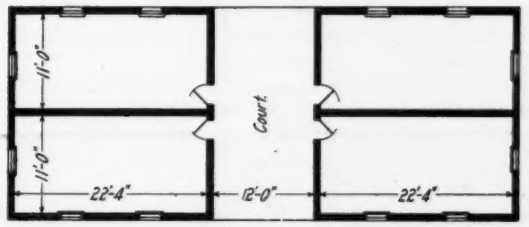
## FAMILY QUARTERS FOR MEXICANS

A housing problem presented to the railroads primarily in the southwest is that of providing for Mexicans with families. Some of these people follow a very primitive mode of living, while others conduct their households more nearly on the scale of the American citizen of limited circumstances. Thus, with some Mexicans, the only facility utilized in cooking and heating is a box of sand in the center of the room on whch an open fire is built, while with others the ordinary cook stove is a familiar utility. It goes without saying the sanitation and facilities for cleaning in the houses they occupy must be such that the accommodations provided may be restored to a reasonably clean condition even after occupation by those least schooled in clean living.

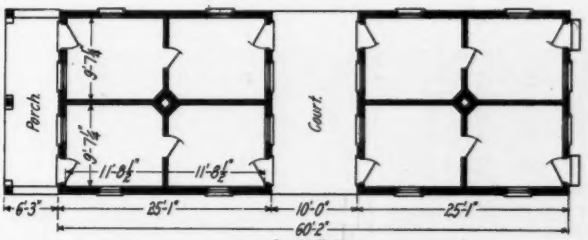
These considerations have led two railroads confronted with the problem of housing Mexicans to adopt a type of structure embodying the simplest details while affording every opportunity for thorough cleansing. The photographs show some glazed tile wall houses with concrete floors built by the Chicago & Alton and the Atchison, Topeka & Santa Fe for use by Mexicans. The first-named road has built 14 of these buildings at various places along its line, while the latter has built some 50 on all parts of the A. T. & S. F. proper as well as on the Coast Lines, except in California, where a concrete building of unit construction is used.

In both of these designs the idea of a group of family quarters is carried out. In the Alton plan each family has only a single room 11 ft. by 22 ft. 8 in., while in the Santa Fe house the family is assigned either one or two rooms, each 9 ft. 7 in. by 11 ft. 8 in. Both designs have a central, covered areaway normally open on the sides, but which may be provided with temporary shutters to afford protection during inclement seasons. The Alton house is provided with a stove for this areaway so that it may be heated in winter, while affording a cool place to do the cooking in hot weather.

The houses are usually made with walls of vitrified hollow tile having a hard, non-absorbent surface, with air spaces that afford resistance to heat transmission and eliminate condensation. An exception was made in the Santa Fe houses shown in the photographs, which are in Chicago, where it was deemed best to use brick walls. The roofs are of frame construction covered with ready roofing. Chimneys are provided so as to give stove pipe connections in each room.

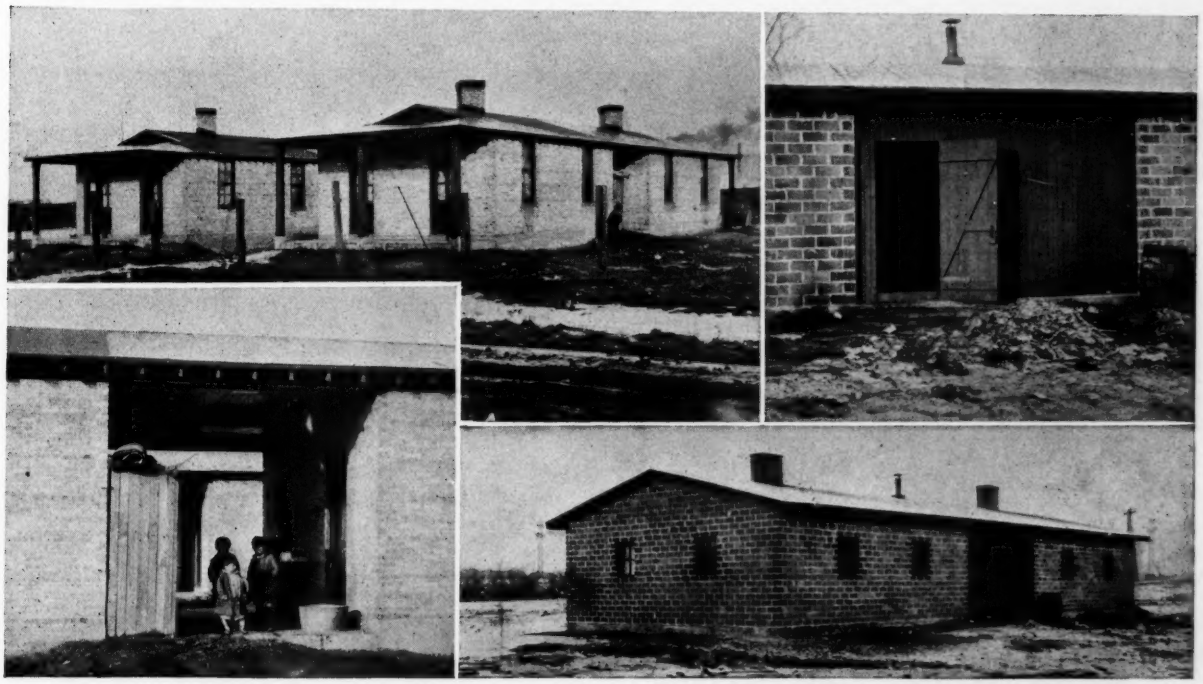


Alton House



Santa Fe House

**Floor Plans of the Family Houses**



**Two Santa Fe Houses**
**The Open Court**

**Court Closed in Winter**
**A Chicago & Alton House**

## UNIT CONCRETE HOUSES

In view of the attention directed to the use of concrete in connection with the housing problems of the war industries, special interest is attached to the development of a unique type of unit construction reinforced concrete house on the Chicago, Rock Island & Pacific for housing laborers on track elevation work in Chicago. The construction details are simple, the number of styles of units is small and the scheme has sufficient elasticity to permit its application to a variety of purposes. As seen in the detail, the fundamental idea is the combination of a post with an interior and exterior wall panel held in place by two parting strips and a batten.

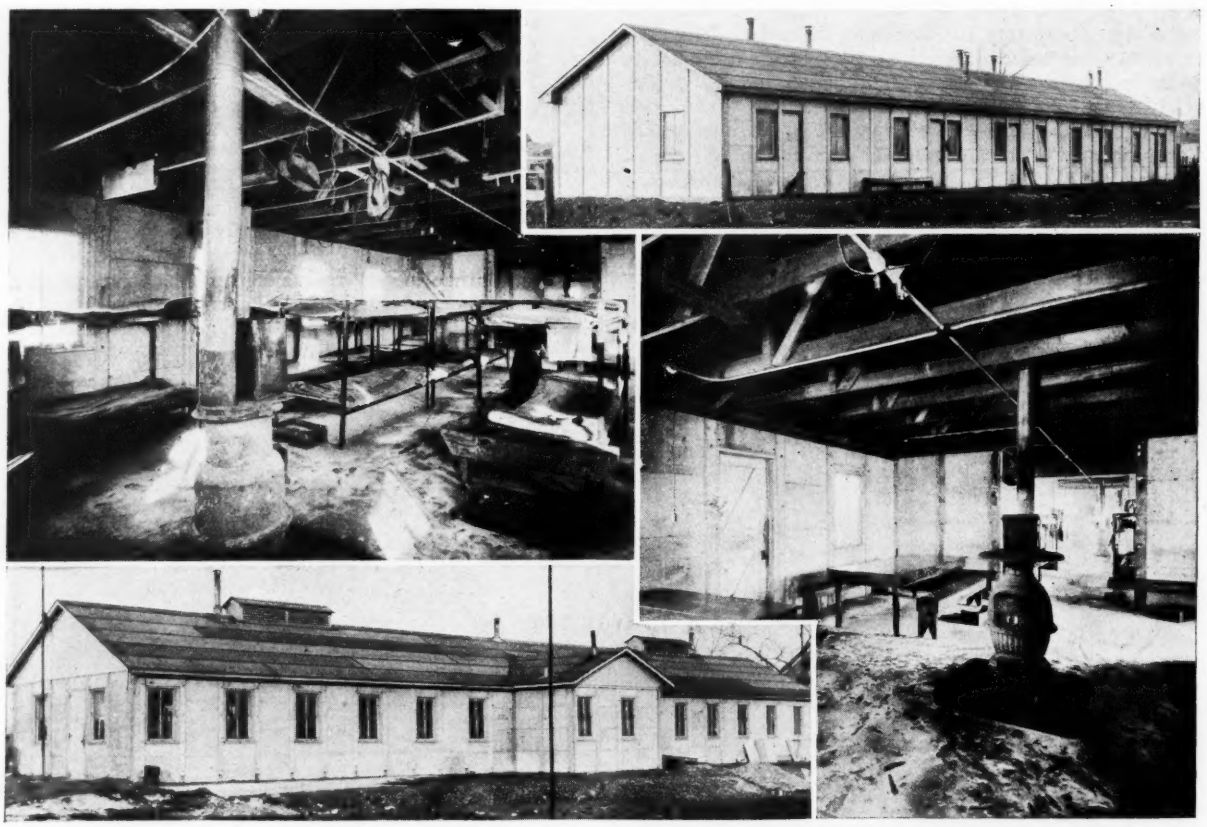
The posts are cast with an integral batten on the outside surface, against which the wall panels one inch thick are placed vertically, one on another, to form the outside wall, after which parting strips, which serve to hold the slabs in place and form a three-inch air space, are bolted on to the posts by means of holes through the posts or are nailed through small holes in the strips to wood inserts in the posts. The inner row of panels is then erected in a similar manner and held in place by concrete battens 1½ in. thick, which are secured in place by means of bolts through the battens and metallic inserts which are cast in the posts flush with the inner surface. The wall plate is rigidly secured to the posts by means of bolts, the heads of which are held in metallic inserts cast in the posts flush with the top surface.

To secure the necessary transverse stiffness in the building, transverse vertical trusses are inserted at intervals of about six panel spaces. They project into the interior space such a distance that the interior post of the truss is in correct position to form an integral part of a cross wall where such is desired.

The wall panels are one inch thick, 3 ft. 1½ in. wide, with a net depth of 2 ft. 1½ in. and weigh 75 lb. They are reinforced with wire mesh. The top and bottom edges are formed to give a shiplap joint. The corner posts are the heaviest units and weigh 650 lb., while the interior posts weigh 250 lb.

Thus far three buildings have been constructed according to this principle, a bunk house, a five-apartment family building, and an ice house. The floor plan of one apartment of the family building is shown on one drawing. Three rooms, a toilet and shower bath are provided. As in the tile houses described above, the floor is of concrete with a suitable drain for flushing out the structure for thorough cleaning. The doors and windows and their frames are of ordinary wood construction, although it is suggested that steel frames would be a natural development. These apartments are allotted free of charge to laborers with families. The favor with which they have been received is indicated by the fact that the men have repeatedly offered to pay $10 a month rent for them, presumably to insure more permanent possession. They are heated at present with stoves. An added attraction is the fencing off for each unit of a kitchen garden in the rear to enable the tenant to have a garden or keep chickens.

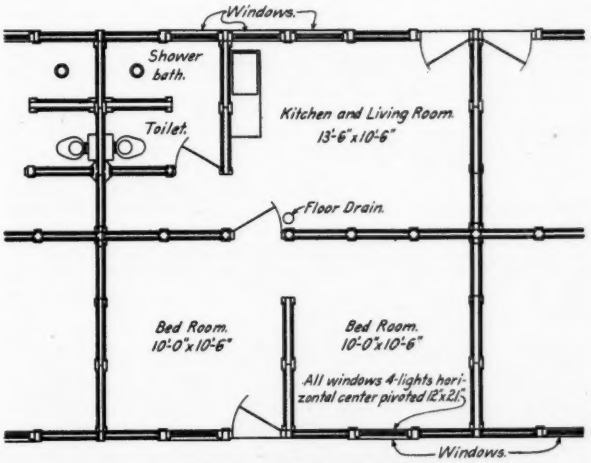
The bunk house is of the same length and width as the family house, but is only partially subdivided. The



**Interior of Bunk House**
**The Concrete Bunk House**

**Exterior of the Apartment House**
**The Lounging Room**

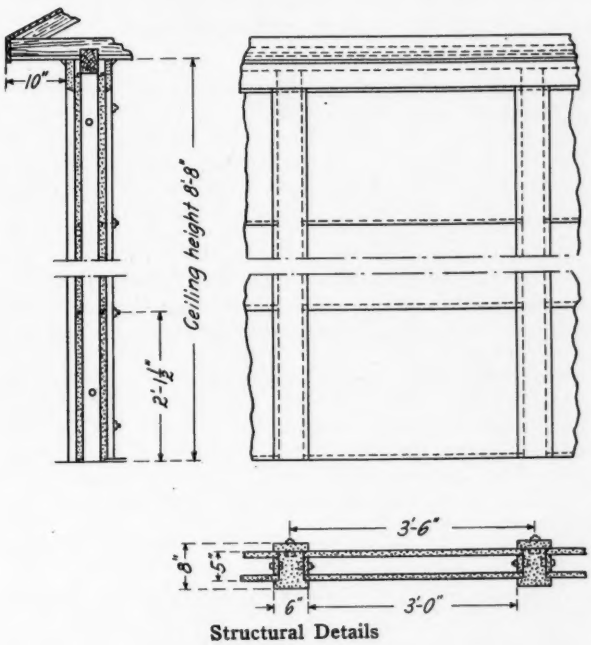
central unit is used as a lounging room, being equipped with tables and benches, while the two units at each end are used as bunk rooms, each unit being fitted with 10 double bunks, thus affording accommodations for a maximum of 80 men. A wing of the lounging room affords bathing and lavatory facilities and a locker is provided




**Plan of an Apartment**

for the safekeeping of the men's valuables. The building is heated by a stove in the center of each unit.

These buildings have timber frame roofs of unit construction; there is one unit roof truss over each wall post, although the roof boards are laid in the ordinary manner and are covered with ready roofing. Monitors have been




**Structural Details**

installed over the sleeping quarters of the bunk house for ventilation. In the family house the undersides of the roof trusses has been sheathed with beaded ceiling to finish off the rooms more neatly and keep them warmer.

While the roof construction constitutes a departure from the non-combustible concrete construction, this fact does not defeat the purpose of the concrete in the walls and floors—to facilitate cleanliness and freedom from vermin and afford a reduction in the fire hazard, which in a bunk house is derived primarily from carelessness with stoves, matches and pipes. These buildings were developed under the direction of Charles P. Richardson, engineer of water service, Chicago, Rock Island & Pacific, Chicago when he was assistant engineer of track elevation.

## INTERPRETATIONS OF THE WAGE ORDERS

IT IS HARDLY to be expected that any simple standards of wages and working conditions can be developed which will apply equally directly to all of the employees in any branch of railway service as diversified as the maintenance of way department. The Board of Railway Wages and Working Conditions undoubtedly made the various supplements to the original wage order, General Order No. 27, as specific as it was practically possible to do. However, in applying these supplements to the employees under their supervision, the officers of the maintenance of way department have encountered many confusing problems and have been forced to establish interpretations of their own which have naturally resulted in considerable dissatisfaction among the men affected.

The greatest confusion in the maintenance of way department arose because of certain apparent conflicts between provisions of Supplements 4, 7 and 8, and particularly the provision in Interpretation No. 1 to Supplement No. 4, that any employees in any department performing. the classes of work specified in Supplement No. 4 and Addendum No. 2 thereto, should receive the rates of pay and be governed by the conditions of employment provided for therein. In an endeavor to harmonize the interpretations of these supplements established on the different roads, a conference was arranged between the representatives of the departments affected on the roads in the Eastern region at which an effort was made to see that employees who were classified according to various titles under different railway organizations should be treated alike. Since the wage orders apply equally to all railways in the country, the interpretations arrived at at this conference are reproduced below:

APPLICATION OF SUPPLEMENT NO. 4 TO GENERAL ORDER 27 AMENDMENTS AND ADDENDA THERETO, AND INTERPRETATIONS THEREOF, AND SUPPLEMENTS NOS. 7 AND 8 TO EMPLOYEES IN THE MAINTENANCE OF WAY DEPARTMENT.

(1) Section 1, Article 1 of Supplement No. 4 provides classification for employees skilled in the building or repairing of gas engines, pumps, scales, hoists, elevators, tie tampers and performing other classes of work as detailed in this section.

(2) Section 1B, Article 1 of Supplement No. 4 provides classification for operators of machine tools as specified in this section, and for the employees assigned to assist those enumerated in paragraph 1.

(3) Section 2, Article 1 of Supplement No. 4 provides classification for employees engaged in laying out, cutting apart, building or repairing steel structures, tanks and drums; patching, riveting, chipping, caulking and flanging work, laying out and fitting up any sheet iron or steel work made of 16-gage or heavier; removing and applying stay rods and braces in tanks and drums; operating punches and shears for shaping and forming; boilermakers' work in connection with the building and repairing of steam shovels, derricks, booms, housings, circles, and coal buggies; laying out, drilling, punching, reaming and riveting "I" beams, channel irons, angle irons and tee irons in connection with steel structures, and performing other classes of work as detailed in this section.

(4) Section 2B, Article 1 of Supplement No. 4 provides classification for operators of machine tools, and for employees assigned to assist those enumerated in paragraph 3.

(5) Section 3, Article 1 of Supplement No. 4 provides classification for employees skilled in welding, forging, shaping and bending of metal; tool dressing and tempering, spring making, tempering and repairing, potashing, case and bichloride hardening, flue welding under blacksmith foreman; operating furnaces, bulldozers, forging machines, drop forging machines; bolt machines and Bradley hammers; hammersmiths, drop hammermen, trimmers, rolling mill operators; operating punches and shears, and doing shaping and forming in connection with blacksmith's work; oxy-acetylene, thermit and electric welding on work generally recognized as blacksmith's work, and all other work generally recognized as blacksmith's work.

(6) Section 3B, Article 1 of Supplement No. 4 provides classification for employees assigned to help blacksmiths; heaters, hammer operators, machine helpers, drill press and bolt cutter operators, punch and shear operators (cutting only bar stock and scrap) in connection with blacksmith's work.

(7) Section 4, Article 1 of Supplement No. 4 provides classification for tinners, coppersmiths, and pipe fitters, skilled in the building, erecting, assembling, installing, dismantling and maintaining parts of sheet copper, brass, tin, zinc, white metal, lead and black planished and pickled iron of less than sixteen (16) gage, including brazing, soldering, tinning, leading and babbitting the bending, fitting, cutting, threading, brazing, connecting and disconnecting of air, water, gas, oil and steam pipes; installing and maintaining water cranes, work generally recognized as plumbers and pipe fitters' work; the operation of babbitt fires and pipe threading machines; oxy-acetyene, thermit and electric welding on work generally recognized as sheet metal workers' work, and all other work generally recognized as sheet metal workers' work.

(8) Section 4B, Article 1 of Supplement No. 4 provides classification for employees regularly assigned to assist employees enumerated in Paragraph 7, and performing work as detailed in this section.

(9) Section 5, Article 1 of Supplement No. 4 provides classification for employees skilled in the building, maintaining and inspecting and maintaining the electric wiring of generators, switchboards, motors and control, rheostats and control, static and rotary transformers, motor generators, electric headights and headlight generators; electric welding machines, storage batteries and axle lighting equipment; pole lines and supports for service wires and cables, catenary and monorail conductors and feed wires, overhead and underground; winding armatures, fields, magnet coils, rotors, stators, transformers and starting compensators; all outside and inside wiring in shops, yards, stations and other buildings, and on steam and electric locomotives, passenger trains and motor cars, and include wiremen, armature winders, switchboard operators, generator attendants, motor attendants, sub-station attendants, electric crane operators for cranes of 40 tons capacity or over; and all other work properly recognized as first class electrical workers' work.

(10) Section 5A, Article 1 of Supplement No. 4 provides classification for operators of electric cranes of less than 40 tons capacity; and for employees doing other work properly recognized as second class electrical workers' work.

(11) Section 5C, Article 1 of Supplement No. 4 provides classification for employees regulary assigned as helpers to assist electrical workers, including electric lamp trimmers who do no mechanical work, and performing work detailed in this section.

(12) Section 6, Article 1 of Supplement No. 4 provides classification for employees skilled in the building, maintaining and dismantling of bridges and buildings, water tanks, coaling stations, docks, wharves and racks, wood work in connection with cranes, hoists, elevators and track or platform scales; flask making, bench carpenter work, carpenter work in buildings, repairing and assembling motor, lever, hand cars and motor and hand station trucks, and all other work generally recognized as carpenters' work.

(13) Section 6, Article 1 of Supplement No. 4 provides classification for employees skilled in painting and removing paint on bridges and buildings and other structures.

(14) Section 3, Article 1 of Addendum No. 2, to Supplement No. 4 provides classification for employees skilled in cabinet making and pattern making; planing mill men and millwrights; painters employed to perform varnishing, surfacing, lettering or decorating.

(15) Section 6B, Article 1 of Supplement No. 4 provides classification for employees regularly assigned as helpers to assist carpenters and painters performing the work outlined in Paragraphs 12, 13 and 14.

(16) Gang leaders or working foremen paid on an hourly basis will receive five cents per hour above the rates provided for their respective crafts as provided in Section 4, Article 3, Supplement No. 4, and Article 5 of Interpretation No. 3 to General Order No. 27, dealing with the general application of Supplement No. 4.

(17) Article 2 of Supplement No. 7 fixes rates for stationary engineers, chief stationary engineers, and stationary firemen.

(18) Article 6 of Supplement No. 7 fixes rates for storekeepers.

(19) Article 1 of Supplement No. 7 fixes rates for those used in clerical positions.

(20) Article 1(b) of Supplement No. 8 fixes rates for piledriver engineers, ditching and hoisting engineers and fence gang foremen.

(21) Article 1 (h) of Supplement No. 8 fixes rates for drawbridge tenders and assistants, piledriver, ditching and hoisting firemen, pumpers, engineers and pumpers, crossing watchmen or flagmen, lamp lighters and tenders.

(22) Article 1 (e) of Supplement No. 8 fixes rates for stone, brick, and concrete masons, plasterers, tile layers, marble cutters and setters.

(23) Article 1 (g) of Supplement No. 8 fixes rates for cooks paid on an hourly basis, and Article 2 of Supplement No. 8 fixes rates for cooks paid on a monthly, weekly, or daily basis.

## THE APPLICATION OF THE SCHEDULES

The experience of one large eastern road has shown the principal change made necessary in office practice by reason of the various wage supplements applying to the maintenance of way department to be in the method of time keeping employed. Under the provision of these various supplements the overtime has to be computed on a minute basis and in order to properly check such overtime it has been necessary to use a daily time slip for all individuals and gangs working in the department. Such daily time slips are required to be in the office of the immediate superior officer on the day following that on which the time was made. After being checked, these slips go to the division engineer for approval and for compilation.

DEPARTMENT ____ DIVISION ____ OFFICE

| POSITION | Dec. 31st–1915 | Dec. 31st 1917 | Jan. 1st 1918 | Awarded by G. O. 27 | May 31st 1918 | After Application of G. O. 27 | After Application of Sup. No. 4 to G. O. 27, effective July 1st, 1918 Ret. to 1-1-18 | Aug. 31st 1918 | After Application of Sup. No. 7 & 8, effective Sept. 1st, 1918 | After Application Sup. No..... effective ..... ..... | After Application Sup. No..... effective ..... | After Application Sup. No..... effective ..... |
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**Form for Recording Changes in Rates**

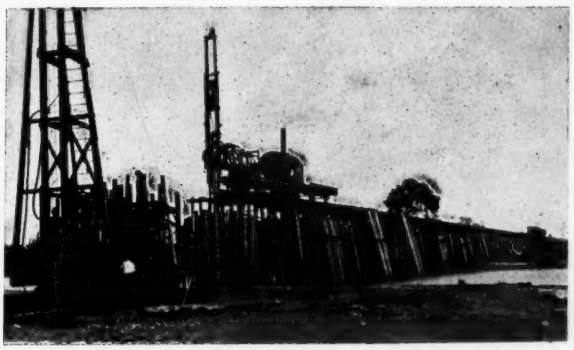
For the present, the individual track foreman is still keeping up his time book and submitting this bi-monthly as heretofore. This daily report will effect a decided improvement both in the timekeeping and in the distribution of the time made as it will effectually break up the old practice of neglecting the time book until near the close of the period and then preparing it largely from memory. It is expected that ultimately time keeping will be centralized in the division offices.

The application of the various supplements, interpretations and addenda to General Order No. 27 have resulted in many changes in the rates of pay of various classes of employees. In each case the basis for arriving at the new rate is obtained by going back to a specified date in the past, such as December 31, 1915, for General Order No. 27, January 1, 1918 for Supplement No. 8, etc. In order to keep track of the rates on these determining dates and the changes which have resulted from the various supplements a form has been devised, a copy of which is shown.

# WHAT OUR RAILWAY FORCES DID IN FRANCE

## First Account of the Actual Transportation Organization and the Scope of Its Activities

WHILE MUCH has been written in the last year concerning the work of American railway men in France it has all been in the nature of fragmentary ancedotes and descriptions. Under censorship regulations it could not be otherwise. Therefore it remained for Samuel O. Dunn, editor of the Railway Age, who spent several weeks in England and France just following the signing of the armistice, to write the first complete detailed account of the work of the railway organization of the American Army in the war. This appeared in the Railway Age of Jan. 3 and is abstracted briefly below.



**Pile Driver Over Loire River; Nevers Cut-off**

When the United States entered the war in April, 1917, the officers and employees of American railways knew extremely little—in fact, practically all of them knew next to nothing—about the way in which the railways of Europe were constructed, equipped and operated. Even as late as July, 1917, the transportation department of the United States Army was practically non-existent. One year later—in June, 1918—it had a personnel of 1,300 officers and 30,000 men, was operating through eleven French ports, and over an extensive system of railways and inland waterways. When the armistice was signed, in November, 1918, the American Transportaion Corps had a personnel of 1,970 officers and 53,136 enlisted men. In addition, 553 officers and 21,452 men were attached to it for duty, making a total assigned and attached personnel of 2,523 officers and 74,588 men.

### WHAT ACTUALLY HAS BEEN DONE

Many things have been published about what the American railway men have done in France. What they have done is to take over the operation, and maintain and enlarge the facilities of existing French railways to the extent necessary, first to move our own armies and supplies to the front, and, second, to enable the French army to continue to carry on its part of the struggle with unimpaired energy and effectiveness.

In order to make it possible to transfer from the ships to the railways all the vast quantities of supplies shipped from America to France for our army, it was necessary greatly to enlarge the transfer facilities at many of the important French ports. In order to enable the French railways to handle this vast additional traffic, it was necessary greatly to enlage the facilites of the railways by building second, third and fourth tracks in some places; by building cut-offs in other places; by constructing numerous large yards and vast storehouses; by building shops to erect and maintain locomotives and cars, and by importing and putting in service large quantities of railway equipment and materials. Over 300 large construction projects (to be exact, 316) were undertaken for the Transportation Corps. The total number of miles of new trackage actually built was 937, and the number of cars shipped from the United States knocked down and erected in France up to December 12 was 15,068. The number of locomotives from the United States put in service by our military forces in France was 1,105.

### DIFFICULT PROBLEM

The first step was taken toward organizing our transportation service overseas, when, in May, 1917, a commission was sent to Europe to investigate the situation from a transportation point of view, composed of Col. William Barclay Parsos; Major (now Colonel) W. J. Wilgus, formerly vice-president of the New York Central; Capt. A. B. Barber, of the Corps of Engineers, U. S. Army; W. A. Garrett, formerly president of the Seabord Air Line, and later vice-president of the Chicago Great Western, and F. de St. Phalle, of the Baldwin Locomotive Works. They were the first American

**General View Nevers Cut-off; Looking East Toward Loire Valley**

soldiers to arrive in France, and reported to General Pershing in June.

Maj. Wilgus and Capt. L. A. Jenny, formerly chief draughtsman of the New York Central, who had come with General Pershing, drew up what became known as "Requisition No. 6." This set forth the amount and kinds of railway equipment, port equipment, tools and materials which were needed then; and it has been the basis of all requisitions made for the transportation service since that time.

General Pershing took the view that the operation of our military railway service should be placed in charge of a man of large experience in the operation of commercial railways in the United States, and indicated to Secretary Baker his opinion that the ablest American

railway man available should be secured. Secretary Baker obtained the services of W. W. Atterbury, vice-president in charge of operation on the Pennsylvania Railroad, and sent him to France, where he arrived in September, 1917, and was made Director General, and Major Wilgus accepted appointment as Deputy General. In due course Mr. Atterbury was given the rank of brigadier general and Major Wilgus the rank of colonel.

Five groups of ports were used by the American forces:

Channel Group.—Le Havre, Fecamp, Hornfleur, Rouen, Cherbourg, St. Malo, Granville.

Brest Group.—Brest, Lorient, St. Brieuc.

Loire River Group.—St. Nazaire, Montoir, Donges, Usine Brulee, Nantes, Les Sables d'Alone, La Pallice, Rochefort, La Rochelle, Ponnay-Charente, Marans.

Gironde River Group.—Bordeaux, Pauillac, Blazefort, St. Loubes, American Bassens, French Bassens, St. Sulpice, St. Pardon, Bayonne.

Mediterranean Group—Marseilles, Toulon, Cette.

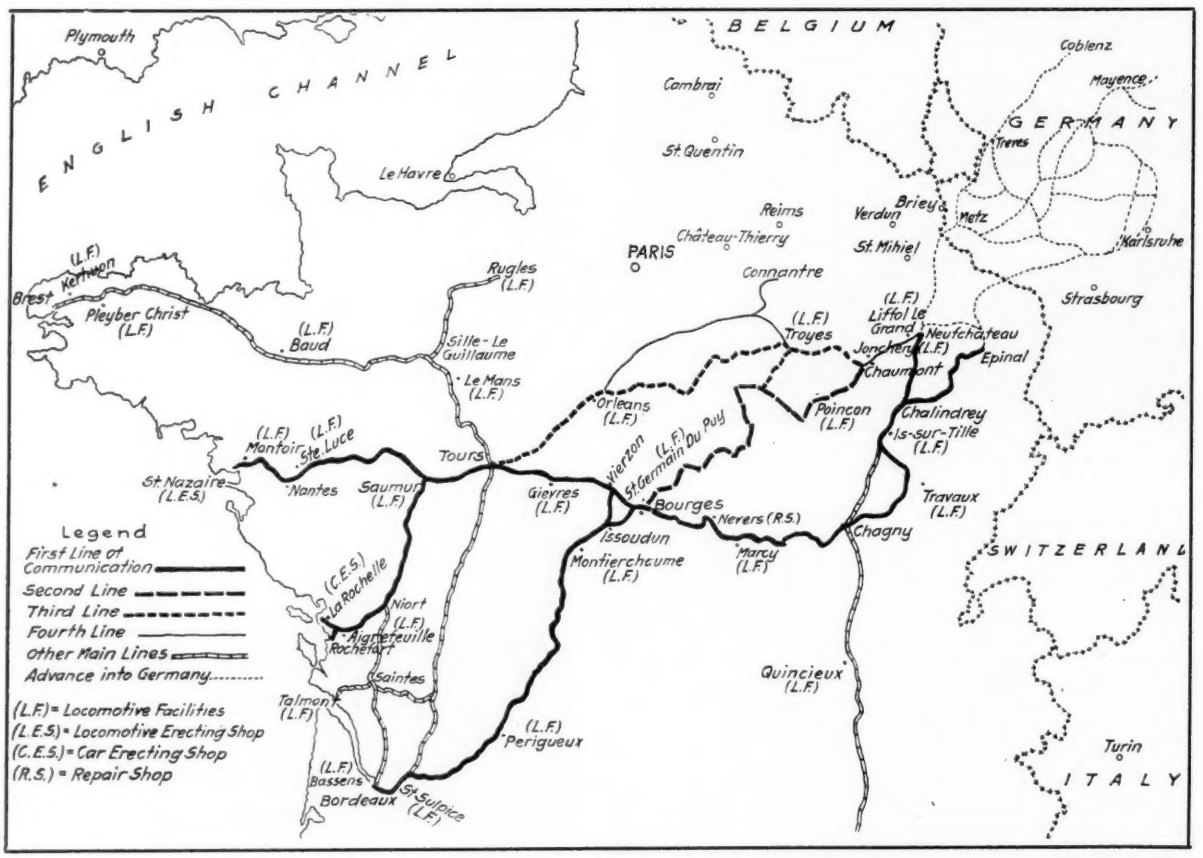
Great improvements were made by our forces at St. Nazaire, but the most extensive port facilities constructed were those on the Gironde River estuary in the neighborhood of Bordeaux. The principal dock project was at American Bassens. The docks at this point consist of 10 berths of 410 ft. each, served by four tracks along the front of the docks. Immediately back of the docks are classification yards and warehouses. There is at present a covered storage capacity of 121,984 sq. ft. and open storage capacity of 262,170 sq. ft. The project is also served by large receiving, classification and departure yards, and engine terminals are connected with the Paris-Bordeaux line of the Paris-Orleans Railway. Of the 38.6 miles of trackage planned 32.9 miles have been constructed, with complete engine facilities.

### American Lines of Communication

The first line of communication of our forces, as finally developed, ran from the St. Nazaire, or Loire River group of ports and the Bordeaux, or Gironde River group of ports, over the Paris-Orleans Railway to Bourges, and thence over the Paris, Lyons and Mediterranean Railway via Marcy, Allerey and Is-Sur-Tille to Liffol Le Grand. Under the plans originally adopted this line of communication was to be used exclusively until the tonnage handled exceeded 25,000 tons daily.

Then a second line of communication was to be opened, which was the same as the first to Bourges, from whence it passed through Etais, Larouge and Neufchateau to Liffol Le Grand. When these two lines of communication were handling a total of 40,000 tons daily, a third line was to be opened from Tours via Orleans and Troyes to Neufchateau.

When the first three lines of communication were handling 50,000 tons a day still a fourth line was to be opened from Brest on the western coast via Versailles, Paris, Connate and Bar Le Duc to Liffol Le Grand; from the Bordeaux Group of ports over a line of railways to Tours not used by the first line of communication, and from Toulon on the Mediterranean to a connection with the first line of communication at Tours. With these four lines of communication it would have been possible to have handled 101,000 tons

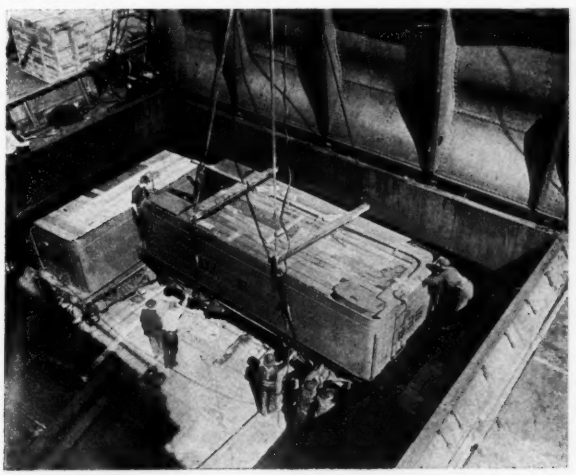



**Lines of Communication, American Expeditionary Forces. Light Dotted Lines Show Advance Into Germany**

daily, and the plans which were being carried out contemplated the full opening of all these lines by June, 1919.

As a matter of fact, a large majority of the supplies for our forces were being handled over the first and second lines of communication when the armistice was signed, although the two lines of communication which had not been fully developed were being used to a substantial extent.

Base storage was provided at Montoir, St. Sulpice, St. Luce, Nantes, Donges, St. Pardon, St. Loubes, Miramas, Blaye Furt and Aigrefeuille. Intermediate storage was provided at Gievres, Montierchaume and Nevers. Advance, or regulating, depots for general supplies, were provided at Is-Sur-Tille, Liffol Le Grand and Tavaux. Ammunition depots were provided at Donges (near St. Nazaire), Mehun, Issoudin and Les Cors (all near Bourges) and St. Loubes (near Bordeaux).



**Locomotive Tenders in Hold of Ship**

## THE TRANSPORTATION OF SUPPLIES

Ships carrying supplies came partly direct from the United States, and partly from England. During the later months of the year all ships from the United States moved in convoys, protected by cruisers and destroyers. All convoys were required to come in sight of Brest, and on the arrival of a convoy there it was instructed regarding the port to which it was to go. The storage depots in the zone of the advance—in other words, in the neighborhood of actual hostilities—are called "regulating" stations, because their current conditions and needs really determine the entire handling of supplies from day to day and month to month. As fast as their supplies are consumed they make requisition on the intermediate storage points; which, in turn, make requisition on the base storage points.

The disposition of a cargo when it arrives in port is determined entirely by its character, and by the supply situation as disclosed by the requisitions which have been made from the various storage points. It may be taken in solid trainloads direct to the regulating station or it may go to certain intermediate stations. In the normal course of events, supplies go from the ships into base storage, and thence to intermediate and advance storage.

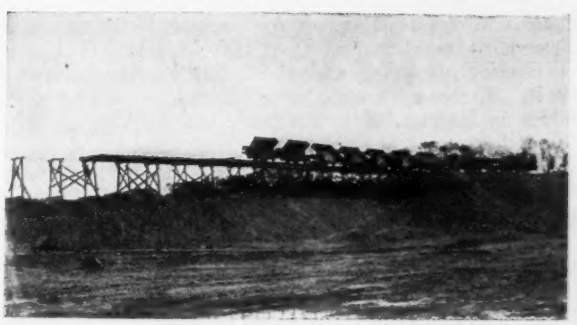
The tonnage unloaded at the ports in November was divided among the various classes of supplies as follows:

| Supplies | Tonnage | Per cent of total |
|---|---|---|
| Coal | 207,644 | 22.55 |
| Forage | 68,154 | 7.40 |
| Foods | 177,791 | 19.30 |
| Clothing | 9,451 | 1.03 |
| Oil | 23,629 | 2.51 |
| Other quartermasters' supplies | 63,657 | 6.91 |
| Transportation materials | 89,721 | 9.74 |
| Motor transportation | 50,096 | 5.44 |
| Engineering supplies | 75,272 | 8.17 |
| Ordnance | 64,195 | 6.97 |
| Medical | 10,973 | 1.19 |
| Signal Corps | 3,114 | .34 |
| Air Service | 9,166 | 1.00 |
| Gas Service | 2,883 | .31 |
| Troop property | 993 | .11 |
| Red Cross | 3,765 | .30 |
| Y. M. C. A. | 2,148 | .23 |
| Naval | 1,780 | .19 |
| Steel billets | 54,379 | 5.91 |
| Miscellaneous | 3,161 | .34 |
| Totals | 920,972 | 100.00 |

## NEW RAILWAY FACILITIES PROVIDED

In order to increase the capacity of the part of the lines used and to be used by our transportation service, a large amount of new equipment was provided, and some important construction projects were carried out. The new construction done included multiple track lines, cut-offs, locomotive and car shops, yards, terminals, etc.

The most important construction project carried out was the Nevers cut-off.* Nevers is the junction point of the lines of the Paris, Lyons & Mediterranean Railway from Bourges, Chagny, Cosne and Molins, and the lines through the city were very much congested. The French wished the Americans to relieve the congestion by building a large yard to the northeast of the city. Instead, they decided to build a cut-off which would render it unnecessary for American trains to pass through the congested city at all.



**Cars Dumping Off Trestle, Nevers Cut-off**

Another important piece of construction work was the addition of two main tracks to those of the already double-track line from Bourges to Pont Vert. Four main tracks were added to the two already running the five miles from St. Nazaire to Montoir, where, as already shown, extensive base storage facilities were provided. Two new tracks—making four in all—were built from Montoir to Donges, which is an important ammunition storage point. From American Bassens (near Bordeaux), to the base storage plant at St. Sulpice, a distance of 6.5 miles, a third track was provided. A three-track line was provided through Nantes, where there had been only one line. Both the Etat (State)

*This is the cut-off described in the *Railway Maintenance Engineer* for January, but through an error it was stated as being near *Navarre* rather than *Nevers*.

and Paris-Orleans Railway enter Nantes, but there had never been a connection between them. The Americans built a wye connection from the Etat to the storage plant at St. Luce. They also built a wye connection between the lines entering Perigueaux to avoid unnecessary switching.

New engine terminals and yards had also to be provided at various places on the lines over which our trains operated, besides those at the storage points, which already have been mentioned. Saumur was the end of the engine runs from Montoir on one line of the railway and from La Rochelle and Rochefort on another. Facilities were provided here for handling 65 locomotives, including inspection, coaling, minor repairing, etc. Fifteen miles of yards were projected, of which 13 were finished.

Perigueaux was the end of the engine run from Bordeaux. The engine terminal plans here were the same as at Saumur. The plans had been 90 per cent carried out when the armistice was signed, and the terminal was in service.

Besides providing facilities for taking care of both, French and American equipment when it was in service, it was necessary for the American Transportation Department to provide shops for getting it ready to put into service after it was received in France. The erection of locomotives and cars from the United States and the repair of those of France and Belgium by our transportation forces were begun in December, 1917. The large locomotive shop, where most of the work on locomotives is done, it at St. Nazaire. Locomotives for overseas shipment are erected and tested in the United States and then knocked down or partially knocked down for shipment.

### ORGANIZATION

When General Atterbury arrived in October he was made a direct staff officer of General Pershing. The Transportation Department at that time had charge of all railway operation, and of all construction incidental to it. There were then nine American railway regiments in Europe, of which three had been assigned to the British, and one to the French. The members of these railway regiments were among the first American soldiers to arrive, there being only about 20,000 Americans in Europe, in July.

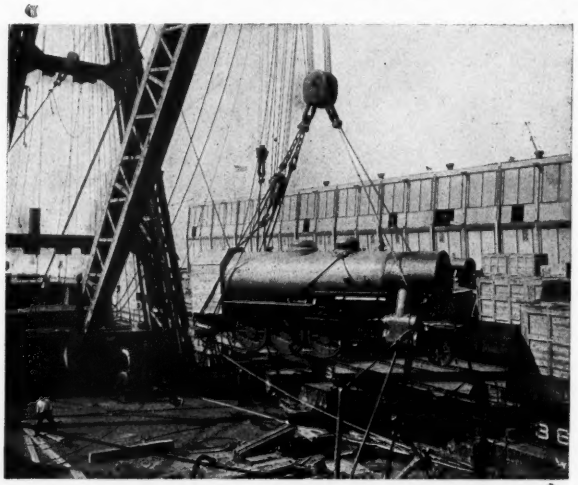
Up to February, 1918, the Department of Transportation had under it railways, light railways, roads and inland water transportation, and the Director General of Transportation was on the staff of the commander-in-chief. Then an important reorganization was effected. The Service of Supply was created, with a commanding general in charge. Within the Service of Supply was created a Service of Utilities, and this was divided into a Department of Construction and Forestry, and a Department of Transportation. All railway construction was taken from the Transportation Department and turned over to the Department of Construction and Forestry, leaving to the Transportation Department only the authority of designing the structures it wanted built.

In April the Army Transport Service, which had always been a branch of the Quartermaster Department, had been transferred to the Transportation Department. The latter then had four branches, those of operation, construction (design), army transport service (water) and business management (including accounting, treasury and similar functions).

There were at that time about 15,000 railway men in France, most of them engaged in ordinary railway operation. They were, however, all organized on a regimental basis. As a regiment will seldom fit into ordinary railway operation, it was necessary to break up the regiments and assign the companies composing them where they were most needed.

Meantime, the establishment of an independent and permanent Transportation Corps, ranking with the other corps of the regular army, was mooted. In July the so-called "Service of Utilities" died. The "Transportation Department" was changed to the "Transportation Service," reporting direct to the Service of Supply; construction and forestry were made a branch of the Engineer Corps; and a special department of light railways and roads was established at general headquarters at Chaumont. At the same time a schedule for 4,000,000 American soldiers in France was worked out. The Transportation Department reported that this should include 150,000 railway men; but the general staff cut his estimate 20 per cent.

In April there were 270,000 American troops in France; and in June there were 1,300,000. Railway



Hoisting Locomotive from Lighter to Ship

troops had not been arriving in anything approaching sufficient numbers, since it was estimated that 60,000 were needed for every 1,000,000 troops. In July and August alone, however, about 15,000 railway troops were received. By September 15, enough men had been trained to enable the Transportation Department to begin operating through trains, yards and terminals from St. Nazaire to the advance zone at Is-Sur-Tille.

### ANOTHER IMPORTANT REORGANIZATION

Some time previously Major E. G. Bliss and Capt. Baker worked out a plan for militarizing the railways in a way that would enable them better to perform their transportation function, and which at the same time would fit them better into the purely military organization. They estimated that an organization to handle all American transportation when the Expeditionary Forces had increased to 4,000,000 should contain 6,669 officers and 187,150 enlisted men. This was to be distributed between 30 railway divisions, 15 grand divisions, and 30 ports. This recommendation was approved in principle in September.

Under this reorganization the principal officers were as follows:

Director General of Transportation: Brig.-Gen. W. W. Atterbury.
Deputy Director General of Transportation: Col. W. J. Wilgus, Col. M. C. Kennedy, Lt.-Col. F. A. Delano, Col. J. A. McCrae, Col. G. T. Slade.

Assistant Deputy Director General: Col. H. C. Nutt.
Director of Army Transport Service: Col. R. E. Wood, Lt.-Col. H. B. Moore, Brig.-Gen. Frank P. McCoy.
Engineer of Construction: Col. H. C. Booz, Col. H. M. Waite, Lt.-Col. A. W. Hudson.
Business Manager: Col. C. M. Bunting, Lt.-Col. I. A. Miller.
General Manager of S. O. S.: Col. F. Mears.
General Manager of Zone of the Advance: Col. H. H. Adams.
Assistant General Manager S. O. S.: Col. F. G. Robbins.
General Superintendents: Lt.-Col. E. Stenger, Lt.-Col. Hinkle, Major Alex. Woodruff, Major Taylor, Lt.-Col. B. L. Bugg, Major E. H. Shaughnessy.
Signal Engineer: Major Vandersluis.
Port Terminal Superintendents: Capt. R. C. Stone, Major John A. McDonald, Lt.-Col. C. A. Stern, Lt.-Col. F. W. Green, Lt.-Col. G. T. Newbury, Lt.-Col. J. H. Elliott, Major T. R. Ryan, Major W. D. Wells.
Inland Water Transport Director: Lt.-Col. L. E. Lyon.
Shop Superintendents: Lt.-Col. G. S. Gaskill, Lt.-Col. George H. Vincett, Major McDonnell.
General Manager's Staff in the S. O. S.:
General Superintendent Motive Power: Col. H. H. Maxfield.
General Superintendent Transportation: Col. D. C. King.
Engineer Maintenance of Way: Major Dilman.
Superintendent Telegraph and Telephone: Major E. R. McFarland.

ARMY TRANSPORT SERVICE STAFF

Director General Army Transport Service: Lt.-Col. E. B. Cushing.
Executive Officer: Major O. D. Miller.
Superintendent Troops and Cargo: Lt.-Col. Coates.
Chief of Operations Division: Lt.-Col. Coates.
Chief Inspector: Major D. W. McCormick.
Chief Marine Engineer: Major George C. Cook.
Chief of Terminal Ports Division: Lt.-Col. R. W. Stovel.
Chief of Lighterage and Harbor Craft Division: Lt.-Com. H. W. Barstow.
Chief Personnel Officer Trans. Corps: Major C. A. Lohr, Major E. G. Bliss.
Director of Military Affairs: Major E. G. Bliss.

# Results of the Annual Track Inspections

IN ACCORDANCE with the practice of past years the results of the annual inspections made public thus far by the roads on which this practice is in force are presented herewith. Awards given out later will be published in future issues. In spite of war conditions, which had a natural tendency to reduce standards of maintenance, most roads maintaining a system of track inspection awards continued this custom during the past year.

## CANDIAN PACIFIC

The Canadian Pacific, Eastern lines, have awarded prizes for the best track section for the year 1918. These include the general manager's prize to the foreman having obtained the best results for the year on the Eastern lines and four general superintendent's prizes to the foremen who have done the best work on their respective territories. The general manager's prize was awarded to H. Gunning, section foreman at Bass Lake, Ont.

General superintendent's prizes were given to A. Peluso, foreman at Parkhurst, Me.; A. Lalonde, foreman at Shawbridge, Que.; C. Topper, foreman at Locust Hill, Ont., and A. Archambault, foreman at Thessalon, Ont.

## PERE MARQUETTE TRACK INSPECTION

The results of the anual track inspection on the Pere Marquette made during the month of October were announced recently. A prize of $100 was given to N. Jorgensen, track supervisor on Petoskey division, for the highest rating on any supervisor's district, his grade being 92.1. A. Gustafson, also track supervisor of the Petoskey division, received $100 for the greatest improvement in the condition of tracks under his supervision, receiving a grade of 90.57, or an advance of 4.71 over last year's rating. Twelve foremen were awarded prizes of $25 for the best ratings of the foremen on each supervisor's district, the highest grade being obtained by William F. Bailey of Montague, Mich., with a grade of 96.8. Eleven prizes of $25 were also awarded to the section foremen showing the largest improvements in their sections over last year. The greatest improvement was made by Clarence Whiting of Alpine, Mich., who received a rating of 93.1, which is 11 points higher than last year.

The names of foremen whose sections received the highest grading on each supervisor's district, their headquarters and the rating of their sections are given in the table that follows:

| *Name of Foremen* | *Section Headquarters* | *Condition* |
|---|---|---|
| Wm. Krajewski | Wyoming | 91.5 |
| Wm. Harris | Fennville | 94.1 |
| Wm. F. Bailey | Montague | 96.8 |
| Thos. Olsen | Twin Lake | 95.1 |
| Chas. Agerson | Williamsburg | 94.7 |
| Geo. Wilkins | Williamston | 95.1 |
| A. Allen | Leamington | 92.9 |
| Louis Waldo | Holly | 95.3 |
| Herman Kumbier | Mershon | 95.5 |
| Richard Morgan | Carsonville | 94.8 |
| Geo. Doerr | Vestaburg | 95.3 |
| Jos. Snell | Edmore | 95.8 |

The names of foremen who made the greatest improvement in their sections on each supervisor's district together with their headquarters, the rating and gain in rating over last year will be found in the following table:

| *Name of Foremen* | *Section Headquarters* | *Condition* | *Gain* |
|---|---|---|---|
| A. Moore | Wellsboro | 93.2 | 9.9 |
| Clarence Peck | West Olive | 93.1 | 9.6 |
| Clarence Whiting | Alpine | 93.1 | 11.0 |
| Fred Schuler | Ellsworth | 93.9 | 6.5 |
| Samuel Smegiel | Beach | 92.3 | 3.3 |
| John Connell | Blenheim, W. | 90.1 | 2.0 |
| P. Barroff | Mount Morris | 93.1 | 11.8 |
| Chas. Tracy | Scottville | 89.4 | 3.0 |
| Raymond Sherman | Tappan | 86.8 | 7.3 |
| John Mason | Hemlock | 91.3 | 4.9 |
| Chas. Wood | Lake View | 94.2 | 7.7 |

The gradings awarded to the supervisors and foremen are based on the condition of line and surface; roadbed and drainage; ballast dressing and shoulder, policing, right of way and station grounds; and fences, cattle guards and signs. The first class receives a weight of three, the second two and the other three classes one each. As in previous years the grading is done in the course of an inspection trip by the general and division officers of the road. Separate committees of four officers each were appointed to grade the roadway sections on each of the classes considered in awarding prizes. For the purpose of equalizing the grades on the different divisions and branches subjected to different standards of maintenance, an addition of four per cent was made to the grades given on second class lines and seven per cent to the grades given on third class lines, the latter including the minor branches.

One notable feature of the results of this year's inspection was the fact that in spite of the trying conditions under which the work was carried on, the grading of the road by operating divisions showed that on no

division was there any falling off in grade, since all five divisions showed an increase in the grading of from 0.1 per cent to 3.16 per cent, while considering the road from the standpoint of the track supervisors' territories, only one district showed a loss and that was only 0.15 per cent. The eleven other sub-divisions showed gains ranging from 0.03 to 4.71 per cent.

## THE ROCK ISLAND AWARD

The Chicago, Rock Island & Pacific awarded a prize of $100 to the roadmaster on each division whose track shows the greatest improvement during the year and a similiar prize of $50 to each of fifty-two track foremen whose sections showed the greatest improvement on their respective roadmasters' subdivision. These awards are based upon inspections of the track by a committee of maintenance and operating officers who passed over the lines at the beginning of the season's work in the spring and again at its close in the fall. The following roadmasters were the recipients of the prizes this year:

P. J. Reynolds, Illinois division, Rock Island, Ill.
J. B. Pugh, Iowa division, Iowa City, Iowa.
D. Kanan, Missouri division, Centerville, Iowa.
C. Linehan, Cedar Rapids & Des Moines Valley divisions, Cedar Rapids, Iowa.
C. H. Gruver, Minnesota division, Manly, Iowa.
J. Colles, Dakota division, Dows, Iowa.
J. Archer, Nebraska division, Fairbury, Neb.
J. D. Sullivan, Colorado division, Limon, Colo.
V. B. Simpson, St. Louis division, Eldon, Mo.
S. P. Jones, Kansas division, Herington, Kan.
John Blalock, El Paso division, Pratt, Kan.
C. B. Shephard, Arkansas division, Little Rock, Ark.
G. H. Carpenter, Louisiana division, El Dorado, Ark.
Jas. Bolton, Indian Territory division, Haileyville, Okla.
J. W. Burrows, Panhandle & Amarillo divisions, Amarillo, Tex.
Geo. Wilmoth, Panhandle & Oklahoma divisions, El Reno, Okla.
J. O'Connor, Oklahoma & Southern divisions, Fort Worth, Tex.

The following track foremen were awarded prizes:

Chicago Terminal division, J. Davoli.
Illinois division, J. Verbeke, H. Flangers, J. Slaughter, A. Ublish and J. Weborg.
Iowa division, E. Beck, F. Ransdell and C. Thomas.
Missouri division, W. E. Tate, H. B. Cassidy and F. Robertson.
Cedar Rapids & Des Moines Valley divisions, J. Denk, J. Cox and D. Hynes.
Minnesota division, J. Hanson, D. E. Kegley and F. Bracken.
Dakota division, N. Poulsen, P. B. Graves, A. Schultz and H. Koester.
Nebraska division, F. Bokenkroger, L. S. Wright and N. W. Baxter.
Colorado division, J. M. Rice and R. W. Smith.
St. Louis division, C. J. Gardner and L. N. Sidebottom.
Kansas division, D. L. Logan, J. M. Carter and Wm. Clark.
El Paso division, E. Poulton, H. L. Rose, O. R. Packbush and H. E. King.
Arkansas division, C. W. Bailey, J. J. Manahan, J. R. McKeever and J. M. Haynes.
Louisiana division, J. C. Crowder and A. Mule.
Indian Territory division, G. W. Seaman, James Murray and W. A. Ellis.
Panhandle & Amarillo divisions, Abe Newton and Mike Flowers.
Panhandle & Oklahoma divisions, Joel Counts and J. R. Davis.
Oklahoma & Southern divisions, J. E. Roylance, J. A. Myers, C. L. Helvy and J. J. Talley.

## ON THE LONG ISLAND

As a result of the recent track inspection for the best line and surface on a supervisor's division of the Long Island, the first prize, amounting to $200, was awarded to Frank J. Nehrhoff, supervisor of Division No. 4, with headquarters at Patchogue. The second prize was awarded to Coleman King, Division No. 2, at Jamaica. In addition a special prize of $100 for the greatest improvement on any one division was awarded to K. M. Hammann at Jamaica.

Prizes to the section foremen, $100 for the first prize and $50 for the second prize for the best line and surface maintained during the year on the five supervisors' divisions, were awarded as follows:

First prizes were given to Carmine Yannucci, John Rozzano, Frank Mariccio, W. S. Jenkins and J. Reichart.

Second prizes were awarded to Joseph Abbatiello, Howard S. Raynor, Jack Mitchell, James Retiano, Charles Peterson and A. Martino.

Two second prizes were awarded on Division No. 1. This was done because the committee making the awards gave the same rating to the two sub-divisions, those of Joseph Abbatiello and Howard S. Rayner and rather than divide the award it was decided that each should receive the amount of the second prize.

## PRIZES GIVEN ON THE ERIE

For several years it has been the practice of the Erie to award prizes to the section foreman and supervisors whose sections and sub-divisions show the most improvement after the season's work. In determining who should be awarded the prizes, track condition is, of course, the feature of greatest importance. The general appearance of the right of way, signs, the condition of fences, road crossings, ditches and other items making for good maintenance are also considered, as are the labor conditions in various parts of the country, and a man who has shown improvement in spite of an inadequate force stands a better chance of receiving a prize than one who has had plenty of laborers and whose territory shows like improvement.

First and second prizes of $100 and $50, respectively, are awarded to the successful section foreman on each division. In addition two grand section prizes of $125 are awarded, one each on the main lines east and the main lines west of Salamanca, N. Y., to the section foreman showing the greatest improvement on his grand division. The prizes to the supervisors fall to the sub-divisions with the greatest number of sections showing the most improvement. In awarding these prizes branch lines are considered as well as the east and west lines, three first prizes of $200 each and three second prizes of $125 being granted.

A tabulation of the successful foremen is appended:

| Division | First Prize of $100 | Second Prize of $50 |
|---|---|---|
| New York | A. Corrado | J. Cianfrocco |
| Delaware | C. A. Buck | M. J. Cuddihe |
| Susquehanna | C. E. Judd | H. Millage |
| Allegheny | S. G. Williams | J. Deamore |
| Buffalo | J. Kennedy | M. Flick |
| Meadville | G. Comstock | Jas. Groover |
| Mahoning | A. Depetro | C. J. Gough |
| Kent | I. E. Garrible | J. Felice |
| Marion | G. Murray | J. Alger |
| N. J. & N. Y. | M. Van Tassel | B. Wales |
| N. Y. S. & W. | P. Johnardo | H. Jarvis |
| Wyoming | | Geo. Stinnard |
| Rochester | Tony De Franco | P. Sullivan |
| | First Prize of $50 | Second Prize of $25 |
| Tioga | W. L. Kelly | C. Osborne |
| Bradford | J. Garin | ..... |
| Allegheny | ..... | L. A. Snyder |

In addition to the above J. Caruso of the Allegheny division and P. Strip of the Kent division received the grand section prizes of $125. Below is a tabulation of the awards to supervisors:

| Division | Supervisor | Amount |
|---|---|---|
| Susquehanna | R. D. Livingstone | $200.00 |
| Buffalo (B. & S. W.) | L. Sipple | 100.00 |
| Marion | A. Burgett | 200.00 |
| Kent | A. J. Bernard | 100.00 |
| Bradford | J. Thomas | 200.00 |
| River Line | P. J. Keenan | 100.00 |

# W. D. HINES, DIRECTOR GENERAL OF RAILROADS

## William G. McAdoo Has Been Succeeded by His Principal Lieutenant, a Former Railroad Officer

WALKER D. HINES, assistant director general of railroads and formerly chairman and general counsel of the Atchison, Topeka & Santa Fe, was appointed director general of railroads, succeeding W. G. McAdoo on January 11. The announcement of Mr. Hines' appointment was made by Mr. McAdoo while on his way to California for a three months' vacation.

In announcing the appointment Mr. McAdoo issued the following statement:

"Mr. Hines has been my assistant at Washington since the beginning of government control and has a thorough knowledge of the organization and administration of the railroads under federal control as well as of the fundamental problem involved in the railroad situation. His ability and experience admirably fit him for the great trust and responsibility with which the President has honored him. Aside from his obvious qualifications, Mr. Hines is in full sympathy with the policies which have guided the Railroad Administration and with the views of the President on the railroad question. I am sure that Mr. Hines will have the hearty support of the fine army of railroad officers and employees and I can ask nothing better for him than that they shall give him and the country the same loyal and effective service they rendered during my term as director general."

**W. D. Hines**

Following the announcement of his appointment, Mr. Hines issued a statement that it would be his endeavor to carry out the policies of his predecessor. He also telegraphed instructions to the regional directors to place on all bulletin boards the following statement of his attitude:

"The President has appointed me director general of railroads, effective at once. I wish my first official act as director general of railroads to be this statement to officers and employees:

"Having been part of Mr. McAdoo's organization from its first day, his policies are my policies and I intend to carry them out and to do so through the existing railroad organizations of the Railroad Administration.

"The responsibilities of the work cannot be exaggerated and there can be no success in it without your confidence and support.

"I shall gain and justify your confidence by prompt and fair treatment, but until you get a chance to know me and judge me by my works, I want you to take me on faith and from the very first day help me to give the government the best possible service and the people the best possible transportation. You and I have been fellow workers in the hard war work of the past year, and I ask you to join me in giving the public even in time of peace the valiant and faithful service that you gave so heartily in time of war."

Mr. Hines was born February 2, 1870, at Russellville, Ky. He was graduated from Ogden College in 1888 with the degree of B. S. and from the University of Virginia in 1893 with the degree of LL. B. He entered railway service in 1893 as assistant attorney of the Louisville & Nashville, which position he held until 1897, when he was appointed assistant chief attorney. From 1900 to 1904 he was first vice-president of the same road and from 1904 to 1906 he was a member of the law firm of Humphrey, Hines & Humphrey at Louisville. In 1907 he became a member of the law firm of Cravath, Henderson & de Gersdorff. In 1906 he was appointed general counsel of the Atchison, Topeka & Santa Fe and in 1908 became chairman of the executive committee of that road while continuing his private law practice, and he was later elected chairman of the board of directors of the same road. In connection with his law practice Mr. Hines represented numerous important clients in litigation before the Interstate Commerce Commission and the courts.

Mr. Hines served as acting director general for several weeks during the spring while Mr. McAdoo was away from Washington, and he was left in charge at Washington when Mr. McAdoo left for California. He is in sympathy with Mr. McAdoo's ideas as to the disposition of the railroads and recently represented him in an address before the transportation conference called by the railroad committee of the Chamber of Commerce of the United States, urging a five-year extension of the period of federal control as the only practical alternative to a prompt return of the railroads to their owners.

He feels very strongly that a continuance of the present plan of operation for a comparatively short period, such as 21 months, would be attended with such disadvantages that unless the time is extended the government should relinquish the railroads at a very early date. As there is little probability that Congress will approve the five-year extension, it is believed in Washington that Mr. Hines' tenure of office will be short.

One of the reasons given by Mr. McAdoo for his resignation as director general—that of inadequate compensation—has been removed in a measure in the appointment of Mr. Hines, as he carries to his new position the salary of $25,000 which re received as assistant director general.

## SLIDE WRECKS A VIADUCT

IT HAS BEEN demonstrated repeatedly that steel viaducts offer limited resistance to the lateral pressure of earth embankments. However, it is not often that such lack of resistance is shown in so spectacular a manner as in the accompanying illustrations which show what happened to an old iron trestle. The structure was not in service at the time that the final failure took place, so the only definite harm done was to increase the cost of wrecking it and salvaging the girders which were slated for reuse at another site.

This structure was a wrought iron viaduct built in 1892. It consisted of a series of 30-ft. tower spans with 50-ft. clear spans and one deck truss span of 100 ft. across the river, giving a total length of 1,400 ft. and a maximum height of about 77 ft. It was replaced during the last year by a concrete arch bridge and an embankment built for double track on a new alinement parallel

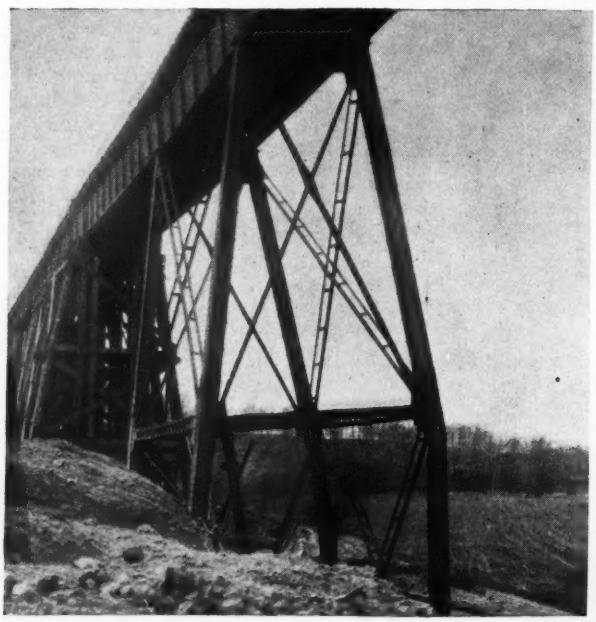


**Fig. 1—Partial Failure of Outside Columns**

to and 100 ft. from the old center line, the concrete bridge occupying 256 ft. of the total length. To avoid interference with the old structure as much as possible the new embankment was filled for the further track first. It was also found possible to install one track on the new fill and place it in condition to transfer traffic from the old viaduct before any serious difficulties were developed, although indications of trouble had made it necessary to watch the viaduct closely for some time before the traffic was removed.

Shortly after the train movements had been transferred and work had been started on widening the embankment for the near track, signs of distress in the old structure were manifested for a length of about 200 ft. where the slope of the embankment came up highest on the tower columns. Disturbance of the alinement was an early sign of trouble and led to efforts to stiffen the towers against side thrust. The transverse diagonals subjected to compression under the embankment loading were reinforced by the introduction of timber stiffeners and two towers of the structure were strengthened by auxiliary frame bents. However, as it was planned to remove the structure at an early date it was not deemed advisable to go to any further expense in an effort to protect it from failure.

As the work on the embankment progressed, further

**Fig. 2—Girders Thrown on the Embankment**

evidence of distress in the trestle towers soon became apparent. The compression diagonals in the bents buckled in spite of the reinforcing struts, while the tension diagonals pulled away from the connecting plates.

**Fig. 3—Showing Sharp Bend in the Columns**

The outside columns of two of the towers buckled as shown in Fig. 1, at or just below the intermediate panel points. Just what took place in the inner columns of the bents was not ascertained as they were largely buried in the embankment. After a few weeks two of the towers collapsed, as shown in Fig. 2 and Fig. 3, allowing the deck to fall on the embankment slope. The remarkable feature of this is that the girders fell toward the embankment instead of away from it.

# A Review of the Labor Conditions of 1918

## Unprecedented Shortage of Employees Results in the Introduction of Unusual Measures to Secure Help

THE LABOR SHORTAGE which confronted the railway executives at the beginning of the past year was the culmination of conditions brought about by 3½ years of the European War previous to our entrance into the conflict. Only a few months after August of 1914 immigration virtually stopped; moreover, as orders for war munitions came into the country during 1915, there grew unprecedented demands for men to operate machine tools, while at the same time large numbers of foreigners living in this country were called to the colors of their native lands. When this country finally entered the war there was an immediate call for volunteers for military service and enlistments took a great many men away, who were followed later by others taken through the selective draft. At the same time war industries took on an increased impetus and still more men were drawn from ordinary activities.

The conduct of the work suffered not only from the actual shortage of labor, but also from the disquieting influence which this condition had upon the morale of the forces. When the men came to realize how sorely their services were needed there were soon evidences of unrest characterized by unreasonable demands for increased wages, improved working conditions and a most unfortunate tendency to jump from job to job in an effort to seek the position that paid the greatest wages for the least amount of work.

Efforts to overcome the problems confronting the employers of labor on the railroads followed several diverting channels as actuated by a number of independent activities. Some of these were fruitful of excellent results and some were not. They are discussed in detail below.

### Immigration

Immigration, which had always been a most fertile source of supply of track laborers, has been virtually a negative quantity since shortly after the beginning of the European war. A detailed statement on immigration will be found in the discussion of the labor supply by Hugh Reid, appearing on another page of this issue.

In considering the possibility of increasing the supply of labor in this country, immigration was naturally taken into account, and since Europe was obviously a hopeless source, attention was turned in other directions. The fact that large numbers of Asiatic workers were taken through Canada on the way from the Orient to France caused certain employers of labor in the West to suggest the idea of introducing these Asiatics as temporary labor in this country, even as early as the summer of 1917. But the United States Department of Labor refused absolutely to entertain this idea, which at no time progressed beyond the speculative stage. Whether it would have been wise to undertake this plan in view of the strenuous objections to it is a question. However, the fact remains that had a large number of these men been employed here during the past year, their removal from the labor market at the present time would now be serving effectively as a counterbalance for the present labor surplus.

Mexico was also suggested early in the year as a potential source of supply, but the operation of the literacy clause of the new immigration law served to exclude the peon. But the Department of Labor for a long time turned a deaf ear to any suggestions for assistance even from this source and for many months held up as a glittering possibility a plan for importing some 100,000 Porto Ricans, against whom no political objection could be raised because they were already classed as American citizens. However, these men never became an important factor in the solution of the labor problem confronting the railroads.

Action was finally taken on the Mexican situation on June 20, when Secretary of Labor Wilson issued a department order temporarily removing the restrictions as to the head tax, literacy or contract labor for Mexicans who would come to this country temporarily for work on farms, in mines or on railroads. However, the conditions imposed on the Mexican in waiving these restrictions were so severe as to offer little inducement for him. Among other things, he was required to deposit with the government 25 cents for each day that he was employed in this country. Since the plan for obtaining immigrants proved impotent under these provisions, they were finally removed in August, too late in the year to be of much avail.

### Women in Maintenance Work

Another effort toward increasing the supply of labor was directed towards the recruiting of women for work ordinarily done by men. These efforts were accompanied by some measure of success, as indicated by an increase in the number of women employed on the railroads, from 60,000 in January, 1918, to about 100,000 in October. However, of the 81,000 employed on July 1, only about 20,000 were employed at men's work, such as machine operating, scrap sorting, car cleaning, storehouse work and track work; and as compared to the total, the number engaged as track laborers was relatively small. Some attention was given to this in the summer of 1917 and by the spring of 1918 the employment of women in small numbers had been tried in a great many localities. In February, 1918, about 300 were so employed on the Pennsylvania Railroad, usually grouped in gangs by themselves. They were generally assigned to work at policing, ballast cleaning and other light duties connected with track work, although in some instances resort was had to the heavier forms of employment.

Various obstacles were presented to the use of women for this work, among which are mentioned the need of better facilities for their comforts and their natural unsuitability for heavy lifting. Finally in October orders were issued in the Eastern and Central Western regions to discontinue the employment of women as track laborers, warehouse truckers, night watchmen and callers at train headquarters, the conclusion being that these forms of employment were unsuited to them from a physical and social standpoint.

Boys were used in increasing numbers in the maintenance of way department, following various plans for encouraging them to enter the service during summer vacations. College students, many of whom found railroad employment during their vacations, were also used in considerable numbers, but enlistments measurably reduced the possibilities of relief from that source. One interesting example of what was accomplished along this line was the use of a gang of University of Chicago stu-

dents on track work on lines of the Burlington in Wyoming.

### The Federal Employment Service

One factor of the labor problem which has exerted a considerable influence on the solution of the labor problem, particularly in track work, was the part taken by the United States Department of Labor through the agency of the United States Employment Service. This is a function of the labor bureau that had been designed originally to help immigrants find work, but which had gradually been expanded so that at the beginning of the year there were 100 branches or employment offices in operation throughout the United States. Special impetus given to this department of the labor bureau during 1918 led to its rapid expansion so that there were some 600 government labor agencies in operation by mid-summer.

In accordance with the policy pursued by the Government for centralized control of all national activities suffering from inadequacy because of the war, the employment service undertook to centralize the hiring and distribution of labor. On June 17, President Wilson issued a proclamation approving this plan and urging all employers engaged in war work to refrain from recruiting unskilled labor in any manner except through the Government agencies. The plan provided that after August 1 all industries employing more than 100 men would be required to employ common labor through this service. Theoretically this was excellent. The competition for labor was keen, various industries and localities were bidding against each other for what remained of the unemployed, with the result that the wages offered by the more profitable enterprises were assuming most unreasonable figures, while men were being shipped back and forth across the country from one labor center to another. To introduce order into this chaotic situation and supply men where most needed, taking men from nonessential pursuits, while giving the laborer one central agency for employment of all kinds, was unquestionably an excellent plan, providing it could be carried out without jeopardizing the recruiting of labor during the period of development. Skepticism as to the success of this plan was expressed early in the program by maintenance of way officers because the first step announced by the federal service in the execution of this plan was the elimination of all competitive agencies for recruiting men by closing up all existing employment offices or placing them directly under Government control through a formality known as "federalizing." It became at once the policy of the service to frown upon the fee agency upon the perfectly obvious grounds that in the face of a most profound shortage of labor there could be no excuse for making a man pay for the privilege of getting a job.

The execution of the plan, however, was not as drastic as orginially proposed, as indicated by the orders issued by the Railroad Administration requiring the roads to comply with the wishes of the employment service. The private agencies were placed under Government control, as were the agencies of the individual railroads, but the roads were permitted to continue the solicitation of labor at points along the line where there were no agencies.

However, matters did not move very smoothly and there is a difference of opinion as to the reason for the difficulty. Officers of the employment service have held that they did not receive the complete co-operation of the railroads, while the railroad officers, on the other hand, inferred that the employment service was not organized to handle common labor of the kind commonly employed at track labor. Among the criticisms was one to the effect that the federal agency men did not take the trouble to insure that the man actually did ship out after he had been assigned to a given job. Another objection, especially in the early days of federal labor supervision, arose from the fact that the employment service attendants usually lost interest in the case as soon as the railroad man stated the rate he was authorized to pay for his help, presumably because the recruiting of men for munition plants or powder mills, at much higher rates, proved much more congenial. Another source of difficulty was the inability of the employment service to control the activities of some of the larger war industries in their strenuous campaigns for help.

Repetition of this story to regional officers soon led to regional instructions to the effect that applications for men at the government agencies did not relieve the individual railroad officer from the responsibility for the maintenance of an adequate force to conduct the work under his direction. This naturally led to the greater exercise of individual initiative in the procuring of men; many railroads opened their own agencies in the labor centers, and others placed their own men in the federal offices. The differences between the two organizations finally led to the calling of the "Labor Conference" in Chicago on January 20 and 21, reported elsewhere in this issue, the results of which promise to be of considerable value.

### Wage Increases

In no department of the railway service at the beginning of the past year was there any greater disparity between the wages paid by the railroads and outside interests than in the maintenance of way department. Supervisory officers had done the utmost in their power during 1917 to improve working conditions and housing and feeding of labor, but it became apparent very soon in the spring of 1918 that no matter how nearly perfection was attained in these conditions it was impossible to hold men in their gangs if there was an appreciable spread between the wages they were able to pay and those which the men could get elsewhere, and it was unfortunately true that in nearly all cases some form of employment was available within a reasonable distance that paid a considerably greater wage.

The matter of compensation for railway employees was one of the first subjects to be considered by Director General McAdoo and it was not very long before a committee was appointed to consider the entire matter of wages and working conditions. However, the investigation of so far reaching and diversified a subject as compensation for employees on railroads necessarily involved the consumption of so long a time that the activities of this commission could afford no relief to the railroads during the early months of the year. It was just at this time that railway officers were particularly perplexed because of an uncertainity as to their authority to grant wage advances to meet competitive conditions. However, pending the report of the wage commission some temporary measures were taken to ameliorate the disparity of compensation on railroads as compared to competing industries.

The first action of this kind was an attempt at temporary standardization of the wages of track laborers undertaken by the regional directors. Thus the director of the Western region on March 30, issued an order fixing the rates of wages for track laborers in the southwest and western territories at 25 cents, in the northwestern territory at 27½ cents and with the latter rate applying also to all terminals.

The report of the wage commission which was made public on April 8, recommended an advance in compen-

sation on a sliding scale of percentages figured on the rates of pay in effect in December, 1915, the percentages ranging from a maximum of 43 per cent for the man receiving $46 or less a month to zero for the person receiving $250 per month or more. The subject matter of this report was made effective on May 25, by an order of the director general known as Order No. 27. This embodied some modifications of the original report including provision for a minimum rate for track laborers of 2½ cents per hour more than the rate in force on January 1, 1918.

However, Order No. 27 proved to be virtually impotent as far as the lower classes of labor was concerned. Consequently orders were issued by regional directors granting additional raises in rates to track forces. Orders were also issued calling attention to the need of making living and working conditions as attractive as possible. The Board of Wages and Working Conditions which had been organized to investigate the operation of Order No. 27 was first occupied with the grievances of other classes of employees, so that it was not until sometime in July that information was collected by the regional officers as to the necessity for relief in the maintenance of way department.

Inquiries made of railway officers during the month of July indicated that the shortage of track forces at that time was from 30 to 50 per cent of the number of men required to complete the season's program. Conditions, however, were found to be very spotty since some roads had much more nearly the full complements of men while others had a totally inadequate force.

Hearings by the Board of Wages and Working Conditions on the status of employees in the maintenance of way department became the basis for Supplement No. 8 to Order No. 27, issued on September 10 and made effective September 1. This superseded the provisions of Order No. 27 in so far as it applied to the employees covered in the supplement and in place of the per cent increases provided in the order there were introduced specific advances for hourly, weekly and monthly rates of pay according to a carefully prepared classification of employees. For instance, track laborers were advanced 12 cents per hour over the rate in effect on January 1, 1918, with a minimum of 28 cents and a maximum of 40 cents per hour. Track foremen were granted an advance of $25 per month over the rates of January 1, with a minimum of $100 a month, while assistant foremen were given 5 cents per hour more than the laborers. Generally speaking the provisions of Supplement No. 8 were satisfactory in so far as they concerned the most of the laborers and most of the trades, but early interpretations of this order indicated that the foremen in the bridge and building and water service groups would in many cases receive less compensation than the men who worked for them. Later interpretations, taking into account the provisions for a constructive eight-hour day under which it was assumed that the new monthly rate was based on an eight-hour working day, with provisions for overtime of straight time for 10 hours or less, with time and a half over 10 hours, in most cases provided a reasonable spread over the compensation to the workmen.

One unfortunate effect of the standardization of railroad wages on the railroads was the elimination of the bonus system for compensating track laborers that had been in use for some time on the Pennsylvania Railroad and the Baltimore & Ohio. Until some exceptions are made to the operation of the standardized hourly wages whereby opportunity is afforded to introduce the idea of additional compensation for increased production, the bonus system necessarily remains inoperative and the efforts made on the two railroads mentioned above to increase efficiency in maintenance of way work by this means will be lost in a large measure.

Enlistments and the selective draft made great inroads among railway employees, but probably less among the class of men employed as track laborers than in other departments of the service. Early in the year the Railroad Administration requested relief from the operation of the draft law in the form of an instruction on the part of the War Department to the local draft boards to give deferred classification to essential railway employees. This, however, the War Department refused to do until late in August when Provost Marshal General Crowder instructed all draft officers to give due consideration of the classification of railway men at that time in Class 1, who were employed in a specified list of skilled occupations which included track foremen. At the same time the railroads were instructed to request deferred classification for those of their employees whose removal from the service would interfere with the effective operation of the railroads. These instructions, however, came so late in the year as to have but little influence on the retaining of men in the service before the signing of the armistice removed this difficulty entirely.

## INFLUENCE OF ZINC TREATED TIES ON SIGNAL OPERATION

THE LAST CONVENTION of the Railway Signal Association developed an interesting discussion on the influence of the presence of ties treated with zinc chloride on the operation of track circuits. Attention was called to the tendency for the more extended use of zinc chloride at the present time, owing to the decreased supply of creosote available. It was also pointed out that difficulty has arised occasionally in the operation of signals through the fact that zinc-treated ties have a lower electrical resistance than untreated or creosoted ties.

The discussion was started by F. W. Bender, assistant signal engineer on the Central Railroad of New Jersey, who stated that for 16 years that road had operated a certain track section, 6,522 ft. long, for the operation of a block signal, using four cells of battery connected in multiple series. A derailment occurred recently on this track section which destroyed 2,580 ties. These were replaced with ties freshly treated with zinc chloride, after which a relay could not be made to pick up with the usual number of cells. In order to operate it 16 cells in multiple-series were required. It was found that the leakage due to these ties increased the current flow at the battery end to 4.2 amperes in dry weather and that after a rain this reached a maximum of 9 amperes.

Ten of the zinc-treated ties were tested by placing them on insulators and it was found that their resistances were 2,200, 1,700, 401, 400, 388, 329, 326, 260, 220 and 125 ohms, respectively. The readings from which these resistances were calculated were made between two points 4 ft. 8½ in. apart. It was also found that the zinc-treated ties were generating currents of their own; a difference of potential of 20 milli-volts being recorded between two points on the ties 4 ft. 8½ in. apart. Further tests showed that the track circuit section would have to be cut into 930-ft. lengths to insure satisfactory operation. Before the zinc-treated ties were installed in this particular section, the cost of the battery material averaged $3.75 a month, whereas the cost of battery material after

the zinc-treated ties were installed varied between $75 and $100 a month.

J. A. Peabody, signal engineer of the Chicago & North-Western, stated that many zinc-treated ties had been put in the track on that road years ago, and that little or no effect was noted during cold or wet weather, but that difficulty occurred on hot, dry days. After studying conditions for some time it was discovered that this effect had practically disappeared within one year's time and that if not over 12½ per cent of the ties were renewed in any one track circuit in one year, little trouble would be experienced in track circuit operation. Accordingly such a rule was put into effect.

With a view to gathering additional specific data on this subject letters were addressed to the signal engineers of practically all railroads in the United States using zinc chloride ties to any extent, soliciting reports on their experiences in maintaining signals operated in tracks containing an appreciable number of ties treated with this preservative. The replies received served to confirm some of the points previously mentioned as well as to bring forth a number of new ones.

E. E. Worthing, a signal engineer of the Southern Pacific, Louisiana lines, related an experience with track circuits on a stretch of 10 miles of second track in Texas laid with new zinc chloride ties, which confirms the view presented above—that a track section laid out of face with new ties of this kind will invariably cause trouble, but that this difficulty becomes less as times goes on, particularly after rains have afforded an opportunity to wash away some of the preservatives near the surface of the timber. He is quoted in part below:

"We have two track circuits in service between mile posts 212 and 214, each approximately ½ mile long. This is new track and new Burnettized ties are used throughout, 18 to the rail, with 9½-in. by 10-in. flat bottom tie plates, single spiked with ⅝-in. by 6-in. standard spikes. The ties had been in the track about six months when the track circuits were put in service, the ballast was clean and well clear of the rails. Shortly after the track circuits were put in we had a light, slow rain one night for about 10 hr. It was hot and clear the following morning, but both track circuits failed and did not pick up until late that evening. I took a series of readings at the batteries and at the relays at noon. One battery was discharging 800 milli-amperes to the track. A series of readings at the relay gave 30 milli-amperes. The other track circuit was discharging 900 milli-amperes to the track; the reading at the relay was 40 milli-amperes. Four-ohm relays were used.

"We have recently had a much harder rain on these two track circuits, lasting for about the same number of hours throughout most of the night. Both track circuits held up and caused no trouble. I am inclined to think that the latter rain, which started off with a very heavy downpour, washed off the zinc sulphate.

"Several years ago I made some tests of ties treated with a solution containing about 1.3 per cent chloride of zinc. After the ties had been soaked a test was made between sections of rail spiked in the usual manner and the ties were found to offer as low as 300 ohms resistance. All the trouble that I have had on this account has been on track where a great number of ties had been changed at one time."

In corroboration of this view the following statement is given by J. C. Mill, signal engineer of the Chicago, Milwaukee & St. Paul.

"There is no doubt but that zinc chloride is a first-class conductor of electricity and the use of ties so treated causes an excessive leakage of track currents, which can only be offset by shortening the track circuit limits. The extent of this shortening also depends upon other general track conditions, drainage, etc., therefore we have not established an arbitrary length of track circuit for our A. C. signaling. When our A. C. signaling was first installed some four years ago, we had circuits as long as three miles, which, of course, were immediately affected by the insertion of zinc treated ties. This also applied to shorter circuits. We have followed the policy of cutting our track circuits wherever trouble was experienced, with the result that we have shortened and cut many track circuits since their first installation.

"From our experience and observation we are of the opinion that the effect of the zinc treated ties is very marked when ties are first installed, but that after the ties have been in service for a year or so the bad effect gradually wears off. This is probably due to the zinc chloride leaching out of the ties and being washed away by the weather."

That the experience is less severe in some quarters than in others, probably through the influence of relative humidity or precipitation, is indicated by the following statement by W. E. Boland, signal engineer of the Southern Pacific, Pacific system.

"We have been using zinc treated ties almost exclusively for some years, and our experience is that they do not seriously affect track circuit operation. Unquestionably they have some slight adverse effect, but it is not sufficient to cause trouble when other track conditions are good.

"We have tried several times to determine just how much effect the Burnettized ties have on track circuits, but there are so many other conditions affecting the current value at the relay that it is practically impossible to make any such determination."

Further information with particular regard to measures taken by the signal engineers to overcome difficulties with the operation of signals is contained in the following statement by C. A. Dunham, signal engineer of the Great Northern, covering experiences on that line and also in territory south of the Ohio river.

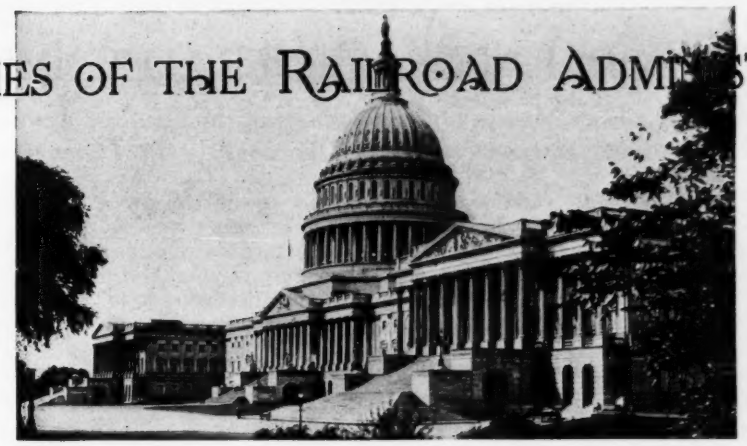
"During 1902, 1903, we installed signals on about 120 miles of new second main track south of the Ohio river. The old track had non-treated ties, and the new track was laid solidly on zinc-treated ties. All ties were white oak and both tracks were ballasted with crushed rock. The longest track circuits were 5,200 ft., with most of them about 4,000 to 4,500 ft. in length. We had no trouble on the old track with the non-treated ties, but we had trouble, and lots of it, on the new track. The remedy was to cut two track sections into three, which gave us track circuits which then approximated 3,000 ft. in length. After this had been done the service was satisfactory.

During 1913, on 120 miles of track in North Dakota, the trouble was greater, largely because the ballast was gravel, and consequently the drainage was not so good as with the crushed rock. The remedy was again to cut the track sections down to about 3,000 ft. After this was done, the service was greatly improved; in fact, we had been able to get along all right, and we will, no doubt, continue to do so permanently.

"My advice would be to limit track circuits to not to exceed 3,000 ft., and preferably to about one-half mile where the tracks are laid on zinc-treated ties. I think you will find that zinc-treated ties as ordinarily placed in the yearly renewals will not make any serious trouble, and even when all of the ties are finally treated you will not have trouble, provided you do not install long track circuits."

# ACTIVITIES OF THE RAILROAD ADMINISTRATION

Director Hines Makes Several Important Appointments



Disposition of the Railways Receives Attention from Congress

THE past month has been characterized by many changes in the personnel of the railroad administration. The appointment of Walker D. Hines as director general to succeed William G. McAdoo is referred to on another page. W. T. Tyler, senior assistant director of the Division of Operation has been appointed director of the division, succeeding Carl R. Gray, who resigned because of ill health in November. J. H. Young, formerly president of the Norfolk Southern and later federal manager of the Virginian and the Norfolk Southern has been appointed senior assistant director of the Division of Operation, succeeding Mr. Tyler. T. C. Powell, formerly vice-president of the Southern Railway System and for the past year a member of the Priorities Committee of the War Industries Board and the representative of the Railroad Administration on this board, has been appointed director of the Division of Capital Expenditures, on January 16, succeeding Robert S. Lovett, who resigned recently to become president of the Union Pacific. The Division of Public Service and Accounting has been divided, effective February 1, and Max Thelen, formerly chairman of the California Railroad Commission, has been appointed director of the Division of Public Service. C. A. Prouty, who has been director of the combined division will retain charge of the Division of Accounting and will also continue as director of the Division of Valuation of the Interstate Commerce Commission. F. F. Gaines has been elected chairman of the Board of Wages and Working Conditions, succeeding G. H. Sines, and A. O. Wharton has been elected vice-chairman, succeeding Mr. Gaines, in accordance with the plan of rotation in office every six months decided upon at the time of the organization of the board.

### What Is to Become of the Railways?

The problem of the future of the railways has received marked attention from Congress and from the public in general during the last month. Following the rejection of Mr. McAdoo's suggestion that government control be extended for five years, a number of other plans have been projected.

The Association of Railway Executives has suggested a plan providing for private ownership, management and operation of the railways with government regulation through a department of transportation headed by a cabinet officer to be known as the secretary of transportation. Questions of rates will be passed on by the Interstate Commerce Commission, but executive and administrative duties incident to the provision of proper and adequate service for the public will come under the department of transportation, which will also have jurisdiction over extensions and new facilities. The Interstate Commerce Commission has come out in advocacy of private ownership and operation under governmental regulation with the removal of a number of limitations against co-operative activities by the carriers, the regulation of security issues, and the establishment of a more clearly defined relation between the federal and state authorities.

The National Association of Railway Security Owners is working in co-operation with the National Industrial Traffic League in the formation of a plan of operation which has not yet been announced. It is known, however, that both of these organizations are opposed to the federal incorporation of the roads and to the suggestion for a secretary of transportation, but that they desire the return of the roads to their owners as soon as remedial legislation can be enacted and are in favor of a greater degree of co-operation on the part of the railroads than has heretofore been permitted by law.

Under date of December 30, 1918, Circular No. 44A was issued by the Director General, cancelling Circular No. 44, dated July 29, 1918, which provided that where street or road construction or other public improvements were contemplated for which a portion of the cost in an amount exceeding $500 was to be charged against any railroad under federal control, the authorities were requested to secure the approval of the Railroad Administration before the work was started.

The pressure to have the railroads use Bessemer rail in place of open-hearth rail has now been removed, as evidenced by the following order of the Eastern Regional Director, file 2800-11A359, which is as follows: "Please cancel any arrangement which may exist with steel mills as a war emergency to accept rails rolled from Bessemer steel upon contracts which specified open-hearth steel; hereafter accept only open-hearth steel upon such contracts."

### Data Regarding Ties Requested

The eastern regional director requested the following data on January 20 to be sent to him so as to reach him not later than Wednesday afternoon, January 22:

1—The total number of cross ties inserted in all tracks during the first 11 months of 1918, 1917 and 1916:

2—The total number of ties received during these same periods;

3—The total number of ties on hand on November 30, 1918, 1917 and 1916;

4—The total number of tons and the track miles of new rails laid in all tracks during the first 11 months of 1918, 1917 and 1916, separated by weights;

5—The total number of tons and the track miles of new rails now on hand and distributed for laying, showing the weight per yard;

# OUTLOOK FOR LABOR GENERALLY IMPROVED

## Several Railway Men in Different Parts of the Country Review Situation of Last Year and Discuss 1919 Prospects

WHILE LABOR CONDITIONS last year were in general the same over the entire country, the shortage differed in intensity in various areas and local conditions exerted their influences on the market. These variations in the problem are shown in the reports of the situation in various localities published below:

### ACUTE SHORTAGE IN PITTSBURGH DISTRICT

In common with other parts of the country, and probably to a much greater extent, the railroads in the Pittsburgh district were never faced with as serious labor shortage as they were during last year. For the first five months of the year the railroads competed with war industries at a considerable disadvantage due to the small wages which they were authorized to pay. The situation was further complicated by the organization of the United States Labor Service. When this service was first established its purpose was primarily to secure men for war industries, and it was of practically no assistance to the railroads. As a matter of fact, in a great many instances it prevented the railroads from the free solicitation of men and established regulations which prevented the transfer of labor by the railroads from one point to another. Toward the latter part of the year this condition was not so apparent, and it is probable that the federal labor service has now readjusted itself so that it can be of some use to railroads.

After the railroads were authorized to pay wages more nearly equal to those paid by other industries, it was possible to secure more men, but the turnover continued so large, and the inefficiency of the labor secured was so marked, that the results obtained were very unsatisfactory. The net result was that maintenance work during 1918 was seriously delayed and a great deal of it uncompleted At the present time the labor situation is much more satisfactory. The war industries have laid off a considerable number of men. The amount of maintenance work being done by the railroads is less, and there is practically no public work being carried on; the result is that we have a sufficient number of men to do the work that is to be done at this season. The turnover, however, continues large, and it is not yet apparent that the men are any more efficient.

The outlook for the future is not clear. A great deal of maintenance work has been deferred, and this should be taken up as soon as the season of 1919 opens up. There is also a great deal of construction work on the railroads in this district which should open up in the spring. It is a question, however, whether, with the present uncertainty as to the future, this will be done. The high prices of labor and material, and the lack of war pressure will probably mean that, as far as construction work goes, very few large undertakings will be started.

In regard to maintenance work there is no question but that an effort should be made to recover the ground lost in the last two or three years. There will no doubt be sufficient labor in this district to take care of this maintenance work and also provide an ample supply for other industries. It is probable that one of the more serious problems in connection with labor during 1919 will be to raise the efficiency of the men employed so that unit costs may be kept within bounds. The attitude of the laborer toward his work is anything but satisfactory, and it is likely that it will take a considerable length of time before he is willing to recognze the fact that the war pressure is off and that he will have to give service more nearly equivalent to the wages paid. For some time past he has been able to dictate his own terms and the amount of service that he will render, and it is altogether likely that he will be rather slow in recognizing a change of conditions. *Engineer Maintenance of Way.*

### CONDITIONS IN CANADA

During 1918 our maintenance of way forces were normal in the Province of Quebec and about 25 per cent below normal in the Province of Ontario. In the working season (April to October inclusive) on our Eastern Lines, we not only maintained our usual number of track laborers, but also secured 20 per cent more for improvements and betterments. On the Ontario Lines there was a shortage of about 15 per cent in the usual number of section men, and such extra gang forces as could be secured only made up this shortage. Owing to the higher rates now paid the maintenance of way forces, and the cessation of war, we do not anticipate any difficulty in securing all the labor needed during the coming season. *M. S. Blaiklock, engineer, maintenance of Way, Grand Trunk, Montreal, Que.*

### WAR WORK CREATED SHORTAGE IN THE SOUTH

Early in 1918 the beginning of work on the Old Hickory powder plant near Nashville, the nitrate plants at Muscle Shoals, Ala., cantonments at Chattanooga, Atlanta and Memphis, and wood distillation plants at Lyle and Collinwood, Tenn., together with other so-called war industries, created a large demand for labor throughout the South. The prices paid for labor at these places were much higher than we could pay and the regular working hours shorter. These, together with the high rates of overtime, caused our forces to be depleted rapidly, and the situation became acute on several divisions. The dearth of laborers in certain localities was met as far as possible by importing men from other parts of the system where they were available; these being brought back and forth between their homes and the work each week.

The fixing of high prices and working conditions by the Wage Commission, together with the coming of the armistice, resulting in the returning of soldiers to civil life and the slowng up of war work of all descriptions, has rapidly filled our requirements in most localities so far as numbers are concerned, and there are indications that the supply of labor will be abundant.

We expect to restore to their former places all returning soldiers, and as far as present working conditions will permit to employ again our experienced men who left us for apparently more attractive employment and who now desire to return. Our forces are now largely made up of new men, and their efficiency is by no means up to the standard.

As for the outlook for 1919, it would seem that the very great cost of improvements undertaken and executed under stress of war conditions has consumed the funds which would ordinarily be available out of earnings for additions and betterments for this year, and it

is probable that such expenditures will be held down to the lowest limit possible. It is impossible to avoid the very considerable demand for maintenance, the cost of which will be greatly advanced over previous years. *Chief Engineer of a Southern Road.*

### OUTLOOK GOOD IN CENTRAL WEST

Our supply of labor for 1918 was a reasonably adequate one. In fact, from the records we keep of forces employed, the actual number of men per mile of track was greater in 1918 than in 1917. However, the difficulties that confronted this railroad with reference to its labor was that there was an extreme shortage in the vicinity of the large cities and industrial territories, and, generally speaking, it is in these vicinities where the larger part of the improvement work is done. We were unable to induce local labor on other portions of the railroad to move to such points.

The high wage paid track labor in 1918 no doubt was the cause for the large local supply, as generally the wage paid by the railroads in the rural communities was considerably greater than what could otherwise be obtained there. However, at industrial centers and large cities even this high rate was not as great as that paid in industrial work.

The greatest shortage experienced on this railroad was in bridge and building labor; due largely to the fact that the wages and working conditions of car carpenters were materially better than the wages of maintenance of way carpenters, who were equally as well fitted as car carpenters to do the car work. This resulted in a very great scarcity of such labor.

It is difficult to forecast what 1919 will develop, but with the return of several million men from the army and navy, and the reduction of forces employed in war and allied industries, it appears to me that the present high wage paid railroad laborers and mechanics is going to draw a very large supply of men to railroad work, and I believe, therefore, that the labor supply will be adequate for all work that is to be done in this territory. *H. G. Clark, chief engineer, Chicago, Rock Island & Pacific, Chicago.*

### ALONG THE MEXICAN BORDER

There was a general shortage of railway labor in this section during 1918, this being substantially the same as in 1917. To date there has been no material change in the situation. We hope the bars may be let down somewhat against Mexico, in which event the situation ought to improve during 1919. While the general labor situation in this section has been rather serious for two years, it has in no sense been disastrous, and I believe there is no reason to anticipate disaster in the future. *J. L. Campbell, chief engineer, El Paso & Southwestern, El Paso, Tex.*

### IN THE NORTHWEST

In the territory under my charge, which extends as far west as Paradise, Mont., the labor conditions last year were very peculiar. In the spring we were paying labor higher rates than ever before and were able to get a pretty good supply of native labor so that our tie renewals and other spring work was fairly well taken care of. We managed to accomplish this because of the very much restricted program for improvement work. Later in the season, after the farm work got under way, we were very short of track labor, but at this time we were particularly favored by weather conditions, which in a measure offset the shortage. Every supervising officer from the section foreman up was appealed to to avoid all unnecessary labor and to make each day's work count to the best advantage, and I think that a great deal was accomplished through the patriotic efforts of these men. We depend to a considerable extent on foreign labor in our extra gangs; in fact, practically all of our extra gang work is done with foreign labor. Last year we had not more than 50 or 60 per cent of the number of men in previous years, but there was less unrest than the year before, very little moving around from road to road, and in consequence I think we got a little better work out of the men. When everything was taken into consideration we got through the season and went into the winter with our work cleaned up and track conditions very generally satisfactory.

At the present time labor conditions are comparatively easy, as they generally are with us at this time of the year. On the east end of the territory we are having no difficulty in getting all of the men we need on the sections, and on the west end of the line we have probably a larger percentage of the foreign laborers staying with us through the winter than in past years. We will probably lay some of our new rail during the winter months, which is something of an innovation with us, but we have felt that it would be necessary to do it at this time, and that even with the disadvantages it could be done more economically with the native labor than to depend upon foreign labor next summer. It does not appear that we will have any difficulty in getting sufficient labor to carry on this work.

The outlook for an adequate supply of labor in 1919 does not appear to be particularly good, and yet I am not altogether discouraged over the outlook. The very large wages now paid laborers will, I think, get us a very good supply of native labor in the spring, which will continue until the time of heavy farm work, which with us is about July 1. After that we will have to depend upon our foriegn labor and will probably be very short. It is, of course, impossible to tell to what extent the foreign laborers will come back to us, but a good many of these men like to work in the Northwest during the summertime on account of climatic conditions, and I am inclined to think that we will get about the same number that we had last year. Taken altogether, I should say that the situation was more favorable than it appeared a year ago, although I do not look for any considerable improvement over 1918 conditions.

As to our program for the coming year: We will undertake to do our normal amount of maintenance work, but our improvement program will be very much restricted, especially as far as track work is concerned. We hope to make some considerable building improvements this year, but to date no authority has been received for the work, and it is, of course, problematical how much will be authorized. The progress of these improvements will, of course, depend on the situation as it develops. Construction work with us is practically at a standstill. *A. M. Burt, assistant general manager, Northern Pacific, St. Paul, Minn.*

### IN THE CENTRAL WEST

The Union Pacific was short about 4,000 men in the track department on its various divisions during 1918, the shortage being most noticeable in western Nebraska, Wyoming, Utah, and a part of Colorado. However, during the last 30 days there appears to have been quite an increase in the supply of labor in this territory. Laborers have been shipped to the Western division from Kansas City, St. Joseph and Omaha, so that at the present time, with the winter basis for labor, track labor conditions are almost normal.

We are not able to tell at this time what the conditions

will be during the coming season, but we expect them to be much better than last year, or even the year before. Also we are not able to tell at this time how much new work will be done. We, of course, have our regular maintenance to look after. In the bridge and building and other maintenance departments there was a corresponding shortage during 1918. *W. R. Armstrong, engineer of maintenance of way, Union Pacific, Omaha, Neb.*

### In Colorado

Notwithstanding the utilization of every effort to obtain labor from immediately surrounding territory a great shortage prevailed during the past season. There was a deficiency on our lines from 1,000 to 1,500 track and bridge and building laborers. Only about 75 or 80 per cent of our maintenance program was completed. Considerable improvement work was delayed, and, while all absolutely essential work was completed, some very desirable renewals were necessarily deferred. Just now on account of the impossibility of performing certain classes of maintenance work, due to seasonal conditions, a normal supply of labor prevails.

The prospects for adequate forces during the coming season are, of course, problematical, and it is extremely difficult to foretell what the actual conditions will be. Unless there is a large influx of common labor from industrial plants engaged in war work, it seems quite apparent that there will be a shortage of several thousand men in this territory for maintenance of way work. This handicap may, of course, be mitigated by the possibility of perfecting some arrangement for the importation of labor from territory not strictly adjacent to this region. The demands for the coming season will be largely augmented by reason of the fact that some of the desirable work carried over will necessarily have to be performed in the near future. The situation as a whole would seem to depend quite largely on general industrial adjustments of the nation from a war-time to a peace basis. *Arthur Ridgeway, assistant chief engineer, Denver & Rio Grande, Denver, Colo.*

### In the Southwest

The labor situation throughout the territory covered by the Missouri Pacific was rather serious during the past year, as we at no time had a sufficient supply of section and extra gang labor to handle the maintenance and improvement work which we had outlined. This shortage was, of course, brought about by war conditions, the men either entering the army or being attracted by higher wages offered by industries temporarily engaged in the manufacture of war munitions. However, during the latter part of the year the gangs were further reduced in size, especially on our Southern lines, owing to the influenza epidemic. On our Western district, comprising a total of approximately 2,600 miles of main line track and having 403 sections, the average shortage of section and extra gang labor for the entire period amounted to about 1,000 men, as against 100 men in bridge and building work. I have no figures available for the other districts, but I am of the opinion that the ratios for the Western district will hold good for the entire system.

Conditions as regards maintenance of way labor are now improving, and I do not anticipate that we will have any difficulty in obtaining a sufficient number of men to carry out the maintenance and improvement work under contemplation for 1919. I do not know of any special construction work which is to be carried out during the present year in this territory. *H. R. Carpenter, chief engineer, Missouri Pacific, St. Louis, Mo.*

## THE MATERIAL MARKET

THE BUYERS ARE WAITING for the bottom to drop out of the market, while the sellers stand calmly by and insist that the bottom is secure against any such disaster. Whether prices will drop is, of course, a question, but one thing is certain—the buyers are waiting. Structural steel plants are now working to only about 60 per cent of capacity, and there has been very little sale of track materials, primarily because the Railroad Administration has not indicated its policy for the coming year. The long talked of rail purchase is still a mystery.

With regard to the stability of present prices, little can be said except that in one department, that of scrap material, in which conditions are clearer of artificial influence than in most any other line, prices have fallen and continue to do so. This will be evidenced by a comparison of the table of current scrap prices appearing below with that given in last month's issue.
subject of negotiations between the government and the lumber manufacturers:

Prices Per Gross Ton

| | Pittsburgh | Chicago | St. Louis |
|---|---|---|---|
| Rails, relaying | | $50.00-$55.00 | $45.00-$50.00 |
| Rails, rerolling | $25.00-$26.00 | 22.00- 23.00 | 21.50- 22.00 |
| Rails, less than 5 ft. long | | 22.00- 23.00 | 18.50- 19.00 |
| Frogs & Switch, cut apart | | 16.50- 17.00 | 18.00- 18.50 |

Prices Per Net Ton

| | | | |
|---|---|---|---|
| No. 1 railroad wrought. | 28.00- 29.00 | 18.50- 19.50 | 18.00- 18.50 |
| Steel angle bars | | 19.50- 20.50 | 16.00- 16.50 |

The following table of current quotations in the steel market indicate that the prices on iron and steel established January 1 are being maintained, although there has been some slight adjustment of the track material prices. There are also rumors of a slight depression in the price of cast iron pipe:

Price Per 100 Lb.

| | Pittsburgh | Chicago |
|---|---|---|
| Bars | $2.70 | $2.97 |
| Plates | 3.00 | 3.27 |
| Shapes | 2.80 | 3.07 |
| Angle Bars | 3.00 | 3.00 |
| Track Spikes | 3.65 | 3.92 |
| Track Bolts | 4.65 | 4.92 |
| Barb Wire, galvanized | 4.35 | .... |
| Wire Nails | 3.50 | .... |
| Boat Spikes | 5.00 | .... |
| Tie Plates, steel | 3.00 | 3.00 |
| Tie Plates, iron | 3.30 | 3.30 |
| C. I. Pipe 6 in. or larger (per ton) | | 66.80 |

Warehouse prices have also been lowered during the month to make them comparable with the reduced mill prices. As now fixed, Chicago warehouse prices are approximately $1 per 100 lb. higher than the mill quotations.

One rather important factor in the material market at the present time is the supply of materials which the war department has on hand, and for which it has no definite use. While materials under this head that are of interest to the maintenance of way department do not total as large as those of some other classes, the quantities are of sufficient importance to justify tabulation below. The one big item in this list is lumber.

| | | |
|---|---|---|
| Rails | 42,855 | tons |
| Spikes | 3,539 | " |
| Bolts | 1,875 | " |
| Splicers | 1,908 | " |
| Turnouts | 4,374 | " |
| Miscellaneous | 2,378 | " |
| Concrete Mixers | 166 | |
| Lumber | 11,785,284 | ft. b. m. |
| Roofing | 69,138 | rolls |

# GENERAL NEWS DEPARTMENT

**The St. Louis Chapter** of the American Association of Engineers was installed at a banquet at the Planters' hotel, St. Louis, on the evening of January 18. About 150 members were enrolled.

**Sleeping Car Service** from Paris to Strasbourg and from Paris to Metz, both leaving Paris at 8 p. m., has been inaugurated by the International Sleeping Car Company, effective December 15.

**The Northern Railway of France** recently issued a statement showing the systematic destruction of the tracks by the Germans, up to the signing of the armistice, and pointing out that 1,731 bridges, 330 stations, practically the whole of the telegraph and telephone wires and the water supplies have been destroyed.

**The Philadelphia division** of the Baltimore & Ohio handled 1,846 troop trains, consisting of 23,147 cars and carrying 745,203 soldiers, between July 1, 1917, and November 7, 1918. The maximum movement occurred in September, 1918, when 272 troop trains, carrying 120,284 men, were handled on this division on their way to embarkation points.

**No Accident Week** was the slogan of the week beginning Sunday, January 19, in the Southern region. All officers and employees pledged themselves to do their utmost to prevent accidents to themselves or their fellow employees. This movement was instituted following a similar arrangement on the Central of Georgia for the first week in December with highly satisfactory results.

**The estimated shipments** of Portland cement in 1918 amounted to 71,645,000 bbl., valued at $113,910,000, compared with 90,703,474 bbl., valued at $122,775,088, in 1917, a decrease in quantity of 21 per cent and in value of 7.2 per cent. The estimated production in 1918 was 71,632,000 bbl., compared with 92,814,202 bbl. in 1917, a decrease of 22.8 per cent. The stocks at the mills increased from 10,462,882 bbl. in 1917 to about 10,594,000 bbl. in 1918, or 1.3 per cent.

**The American Society of Civil Engineers** announces the election of the following officers: Fayette Samuel Curtis of Boston, Mass., president of the Old Colony Railroad, president; H. S. Crocker, Denver, Colo., and Leonard Metcalf, Boston, Mass., vice-presidents; A. S. Tuttle, New York, treasurer; G. H. Clark and Jacob S. Langthorn, New York; Charles C. Elwell, New Haven, Conn.; Willard Beahan, Cleveland, Ohio; John W. Alvord, Chicago, Ill., and Carl E. Grunsby, San Francisco, Cal., directors.

**The disposal of lumber** and wood products on hand in the War Department's stores will be the special problem of a recently created agency, with a director of sales at its head. This agency will dispose of the vast quantities of timbers and other wood products which were on hand at various cantonments and building projects throughout the United States at the time the armistice was signed. The director of sales will confer with committees representing industries affected by the disposal of different kinds of supplies, in order that business conditions may be disturbed as little as possible under the circumstances.

**The anuual dinner** of the Western Society of Engineers took place at the Hotel Sherman, Chicago, on January 22, when the results of the recent election of officers was announced. A. S. Baldwin, vice-president of the Illinois Central, was elected president of the society; Kempster B. Miller, consulting engineer, first vice-president; William M. Kinney, general manager of the Universal Portland Cement Company, second vice-president; J. L. Hecht, mechanical engineer of the Public Service Company of Northern Illinois, third vice-president; C. R. Dart, bridge engineer of the Sanitary District of Chicago, treasurer (re-elected), and E. T. Howson, editor of the *Railway Maintenance Engineer*, trustee for three years.

**Another fatal railway collision** of the man-failure type took place on the New York Central at South Byron, N. Y., seven miles east of Batavia, between three and four o'clock in the morning of January 12. Twenty-two passengers were killed and 20 more were injured. The leading train, the second section of No. 17, the Wolverine, was stopping to receive a helper engine when No. 11, the Southwestern Limited, crashed into the rear car. Although other evidence indicates to the contrary, both the fireman and engineer of train No. 11 claim that the automatic block signal in the rear of the train was in the clear position and that they did not see the flagman of No. 17 or hear his torpedoes. Another accident of a similar nature took place on the Philadelphia & Reading at Port Washington, Pa., on the following day, in which 12 passengers were killed and 20 more were injured.

## ALLIES TO TAKE OVER THE TRANS-SIBERIAN RAILWAY

Acting Secretary of State Polk has announced that an understanding has been reached by the State Department in Tokio regarding the proposed restoration of the efficiency of the Trans-Siberian Railway, including the Chinese Eastern Railway, and the proposed plan will be submitted to this government through the Japanese ambassador in Washington. Briefly, it is proposed that there shall be an inter-allied committee under the presidency of a Russian, this committee to consist of one representative of each of the following nations: Russia, China, Japan, United States, Great Britain, France and Italy. Under this committee will be established two boards, (1) a technical board, on which John F. Stevens, who was chairman of the Stevens Railway Commission, will serve, and (2) a military board. Since the other members of the Stevens commission returned to this country some time ago, Mr. Stevens has been serving in a supervisory capacity over the members of the Russian Railway Service Corps, composed of American engineers and railway men sent to Siberia to help rehabilitate the Russian railway system.

## NOMINEES FOR AMERICAN RAILWAY ENGINEERING ASSOCIATION OFFICES

The nominating committee of the American Railway Engineering Association has selected the following candidates for offices for the ensuing year: President, Earl Stimson, general superintendent maintenance of way and structures, B. & O., Baltimore, Md.; vice-president, J. A. Atwood, chief engineer, P. & L. E., Pittsburgh, Pa.; treasurer, Geo. H. Bremner, district engineer, Bureau of Valuation, I. C. C., Chicago; secretary, E. H. Fritch, Chicago. For directors (three to be elected), the committee nominates Hadley Baldwin, assistant chief engineer, C., C., C. & St. L., Cincinnati, Ohio; C. F. Loweth, chief engineer, C., M. & St. P., Chicago; J. C. Mock, signal-electrical engineer, M. C., Detroit, Mich.; Geo. A. Mountain, chief engineer, Canadian Railway Commission, Ottawa, Canada; J. A. Peabody, signal engineer, C. & N. W., Chicago; H. T. Porter, chief engineer, B. & L. E., Greenville, Pa.; E. B. Temple, engineering assistant to regional director, U. S. R. A., Philadelphia, Pa.; F. L. Thompson, chief engineer, I. C., Chicago; F. E. Turneaure, dean, College of Engineering, University of Wisconsin, Madison, Wis. Five members of the nominating committee are to be elected from the following: J. R. W. Ambrose, chief engineer, Toronto Terminals Railway, Toronto, Canada; D. J. Brumley, chief engineer for corporation, I. C., Chicago; Maurice Coburn, supervising engineer, Pennsylvania Lines, Indianapolis, Ind.; C. F. W. Felt, chief engineer, A. T. & S. F., Chicago; E. A. Hadley, engineering assistant to regional director, U. S. R. A., St Louis, Mo; H. E. Hale, group engineer, President's Conference Committee, New York City; A. W. Newton, chief engineer for corporation, C., B. & Q., Chicago; G. I. Ray, chief engineer, D., L. & W., Hoboken, N. J.; Louis Yager, engineer maintenance of way, N. P., St. Paul.

# PERSONAL MENTION

## GENERAL

**Charles B. Eddy,** heretofore assistant general counsel for the United States Railroad Administration, has been appointed associate director of the Division of Finance.

**Walter Wright Greenland,** division engineer of the Wabash with headquarters at Moberly, Mo., has been appointed superintendent of the western division of that road with the same headquarters. Mr. Greenland was born at Clarion, Pa., in January, 1876, and attended the Pennsylvania State College from 1890 to 1896. One year later he entered the service of the Carnegie Steel Company in the construction of the Union Railway connecting the Braddock, Homestead and the Duquesne steel mills. Later he assisted in improvement work with the same company at Homestead. In 1900 he secured employment with the Pennsylvania Lines West, doing office, field, and steel inspection work. In 1901 he left the Pennsylvania and went to the Wabash as assistant resident engineer with headquarters at Decatur, Ill., and has been in the continuous employ of that road to the present time, holding consecutively the positions of resident engineer, assistant engineer maintenance of way, engineer maintenance of way, division engineer and superintendent.

Walter Wright Greenland

**Lawrence A. Downs,** general superintendent in charge of the northern lines of the Illinois Central, who has been promoted to assistant general manager of that line, the Yazoo & Mississippi Valley and the Chicago, Memphis & Gulf, with headquarters at Chicago, received most of his railway training in the maintenance of way department. Mr. Downs was born at Greencastle, Ind., on May 9, 1872, and graduated from Purdue University in 1894. Early in 1895 he began railway work with the Vandalia Railroad and from March, 1896, to 1898, was in an engineering party on the Illinois Central. He then served as roadmaster from 1898 to March, 1907, on the Amboy, the Louisville, the Louisiana, the Springfield and the Chicago divisions. In March, 1907, he was appointed assistant chief engineer maintenance of way, remaining in that position until December 6, 1910, when he was appointed superintendent of the Kentucky division. On November 1, 1915, he was promoted to general superintendent of all lines south of the Ohio river, with headquarters at New Orleans, La. On August 1, 1917, he was transferred to Chicago to become general superintendent of the northern lines. He has continued in that position up to the time of his recent promotion.

L. A. Downs

**A. W. Thompson,** federal manager of the Baltimore & Ohio Eastern lines and formerly vice-president of the Baltimore & Ohio Company, and for many years a railway engineer, has resigned, effective on February 1, and is leaving the railroad service to become president of the Philadelphia Company, which operates a large number of public utility companies in Pennsylvania. Mr. Thompson began railway service in the drafting rooms of the Erie in 1894 and held various railway engineering positions, becoming chief engineer of the Baltimore & Ohio in 1910.

**R. N. Begien,** assistant to the federal manager of the Baltimore & Ohio Eastern Lines, with headquarters at Baltimore, Md., who has been promoted to federal manager of the Baltimore & Ohio, Western Lines, with headquarters at Cincinnati, is an engineer. Mr. Begien was born at Boston, Mass., on March 15, 1875, and was educated in the engineering department of Harvard University. For three years he served as a member of the Nicaraguan Canal Commission in Central America, following which he went to South America, where he spent a year as a railway engineer in Ecuador, returning to the United States to enter the engineering department of the District of Columbia. He began his career with the Baltimore & Ohio on August 1, 1902, as an assistant engineer at Somerset, Pa., and in June, 1908, he became division engineer at Philadelphia. He was appointed assistant to the chief engineer of the Baltimore & Ohio under A. W. Thompson on May 1, 1910, and when Mr. Thompson became general manager Mr. Begien continued as his assistant, becoming assistant to the third vice-president on May 1, 1912. In December of the same year he was promoted to assistant general superintendent with headquarters at Baltimore, and in July, 1913, he was appointed general superintendent of the Baltimore & Ohio Southwestern. In July, 1916, he was appointed chief engineer of the Baltimore & Ohio system with headquarters at Baltimore. On April 1 of the following year he was appointed general manager of the Eastern lines and in July, 1918, he became assistant to the federal manager (operating) of the Baltimore & Ohio Eastern Lines and New York Terminals; the Western Maryland; the Cumberland Valley; the Cumberland & Pennsylvania, and the Coal & Coke with headquarters at Baltimore, which position he held at the time of his appointment as mentioned above.

R. N. Begien

**John Madden Egan,** who was promoted to general superintendent, Southern lines of the Illinois Central and the Chisago, Memphis & Gulf with headquarters at New Orleans, La., received considerable of his railway experience in the maintenance of way department. He was born at Amboy, Ill., on September 1, 1880. Mr. Egan has been in the service of the Illinois Central for the past 25 years. He entered railway service in August, 1893, as messenger on that road at Chicago. In 1894 and for the three years following he was agent at One Hundred and Fourth street, Chicago. From 1898 to 1901 he was employed as rodman in the maintenance of way department, following which he became assistant engineer in the maintenance of way and construction departments. In 1903 he was appointed road supervisor; from 1904 to 1911 he was roadmaster on the Freeport division and the Nashville and Tennessee divisions. On June 6, 1911, he was appointed superintendent of the Mississippi division at Water Valley, Miss., and five years later he was transferred

to the Tennessee division at Fulton, Ky., which position he held until his promotion to general superintendent at New Orleans.

## ENGINEERING

**H. N. Rodenbaugh,** staff officer, engineering, in the office of the Southern regional director, has been appointed engineering assistant to the regional director, with office at Atlanta, Ga.

**A. E. Owen,** chief engineer of the Central Railroad of New Jersey and the New York & Long Branch, has had his jurisdiction extended over the Philadelphia & Reading, the Atlantic City Railroad, and the Port Reading Railroad, vice **S. T. Wagner,** resigned.

**Horace Stringfellow,** recently a captain in the United States Army, has been appointed district engineer of the Southern Railway with headquarters at Charlotte, N. C. Mr. Stringfellow was born at Montgomery, Ala., in March, 1882. He was graduated from the University of the South in 1902, and entered the service of the Southern Railway as a levelman in 1904, subsequently becoming transitman in the same year. In 1905 he was appointed assistant engineer and in 1917 was appointed district engineer with headquarters at Lexington, Ky. In August, 1918, he was granted a leave of absence and entered the United States Army with the rank of captain in the Engineering Corps, from which he received his discharge in December. On January 1, 1919, he was appointed district engineer as above noted.

**W. Walker,** acting division engineer on the Eastern Lines of the Grand Trunk with headquarters at Montreal, Que., has been made division engineer on the Eastern Lines, succeeding **Major F. L. C. Bond,** who was promoted to chief engineer, as reported in last month's issue. Previous to his work in the engineering department of the Grand Trunk Mr. Walker spent several years in railway and dock construction in Scotland and Brazil. He entered the Grand Trunk service in 1908 as assistant in the office of the engineer maintenance of way. He was appointed assistant engineer in the chief engineer's office in 1909 and in 1910 he served as assistant engineer on the Ottawa division. In 1916 he was appointed assistant land commissioner, and since 1917 he has been acting division engineer at Montreal.

**F. M. Graham,** who was promoted to supervising engineer of the Pittsburgh, Cincinnati, Chicago & St. Louis with headquarters at Columbus, Ohio, as announced in last month's issue, was born January 29, 1872, at Nelson, Ohio. He entered railway service with the Cleveland & Marietta in August, 1895, and in 1897 he attended the Case School of Applied Science in Cleveland, Ohio. Subsequently Mr. Graham held minor engineering positions with the New York, Chicago & St. Louis and later with the Pennsylvania Lines, being promoted to assistant engineer maintenance of way of the Pennsylvania Lines in 1900. In 1903 he was promoted to engineer maintenance of way with headquarters at Zanesville, being transferred later to Fort Wayne and to Chicago. He was located at Chicago when he received his recent promotion.

**Stephen Elliott Shoup,** assistant engineer on the Kansas City Southern at Kansas City, Mo., has been appointed engineering assistant to the general manager of that road with the same headquarters. Mr. Shoup was born at Sewanee, Tenn., on January 14, 1884, and attended the Sewanee Military Academy from 1897 to 1900 and the University of the South at Sewanee, Tenn., from 1900 to 1903. He entered railway service in April, 1906, with the Southern Pacific as an instrumentman and resident engineer on construction. In June, 1907, he entered the service of the St. Louis-San Francisco as transitman and concrete inspector, and in January, 1910, he was appointed assistant engineer and resident engineer for the Maxey Engineering Company. One year later he served as a draftsman in the division engineer's office of the Kansas City Southern at Pittsburg, Kan., and in August, 1912, he was appointed assistant engineer of the Department of Sewers of the City of Cincinnati, Ohio. In June, 1914, he again entered the service of the Kansas City Southern, where he served as a draftsman, assistant engineer and acting division engineer, being employed as assistant engineer at the time of his recent appointment.

**F. G. Jonah,** formerly chief engineer of the St. Louis-San Francisco System and more recently colonel of light railways A. E. F., has returned to this country and will resume his position on February 1 as chief engineer of the Missouri, Kansas & Texas and the Frisco Lines north of the Red river. **V. K. Hendricks,** acting chief engineer of the above named railroads, will resume his old position as assistant chief engineer.

**Clark Dillenbeck,** engineer bridges and buildings of the Philadelphia & Reading, with office at Philadelphia, Pa., has been promoted to assistant chief engineer of the Philadelphia & Reading, the Central Railroad of New Jersey, the New York & Long Branch, the Atlantic City Railroad and the Port Reading Railroad, with the same headquarters. Mr. Dillenbeck was born at Palatine Bridge, N. Y., on June 24, 1866. After graduating from Canajoharie Academy he entered Cornell University, graduating as a civil engineer in 1888. He began railway work in May, 1890, as an assistant engineer on the Philadelphia & Reading, and has since been continuously employed by that road. In January, 1914, he was appointed engineer of bridges and buildings, a position he held until receiving the appointment as assistant chief engineer of the roads above mentioned.

Clark Dillenbeck

## TRACK

**Walter Baker Harris,** supervisor of track of the Okolona district of the Mobile & Ohio, has been promoted to roadmaster on the St. Louis division with headquarters at Murphysboro, Ill. Mr. Harris is a native of Tuscaloosa, Ala., and a graduate of the University of Alabama. He entered the service of the Mobile & Ohio in the engineering corps on the St. Louis division in 1908. He left this position in 1912 to accept service elsewhere, but returned to that road in July, 1914, being appointed assistant valuation agent with office at Mobile. In July, 1915, he was promoted to supervisor of track of the Okolona district.

**Ben D. Marburger,** assistant engineer of the Missouri, Kansas & Texas at Parsons, Kan., who was appointed general foreman of that road with the same headquarters, as announced in last month's issue, was born at Smithville, Texas, on December 10, 1883. He graduated from the A. & M. College of Texas in 1905. Mr. Marburger entered railway service with the Sunset Central Lines the same year as a draftsman at LaFayette, La. From the latter part of 1905 to January, 1912, he studied operation on the Houston & Texas Central, holding such positions as timekeeper, instrument man, section foreman and roadmaster. In October, 1913, he entered the service of the St. Louis, Brownsville & Mexico as revaluation engineer, and in March, 1915, he became roadmaster of the Coast division of the San Antonio & Aransas Pass. February 1, 1918, he was appointed assistant engineer of the Missouri, Kansas & Texas, which position he held until made general foreman.

**George J. Daly,** supervisor of the New Jersey & New York Railroad, the Northern Railroad of New Jersey, and the Piedmont branch of the Erie, with office at Jersey City, N. J., has been appointed supervisor of the Greenwood Lake division and the Newark branch of the Erie, with office at the same place. **Edward J. Dwyer,** supervisor of the Greenwood Lake division and the Newark branch at Jersey City, succeeds Mr. Daly. **Paul Davidson,** supervisor of track on

the Graham line, with office at Campbell Hall, N. Y., has been transferred to Blairstown, N. J., relieving **John S. Houck,** acting supervisor, transferred. **John F. Smith** has been appointed track supervisor of the Graham line, Montgomery and Pine Island branches, with office at Campbell Hall, N. Y., succeeding Paul Davidson, transferred from the Graham line, and relieving **John Carr** from supervision of the Montgomery and Pine Island branches.

## BRIDGE

**Andrew Hanson** has been appointed supervisor of bridges and buildings on the Yellowstone division of the Northern Pacific with headquarters at Glendive, Mont., succeeding **W. D. Pearce,** promoted.

**F. E. King,** district carpenter on the Northern division of the Chicago, Milwaukee & St. Paul, with headquarters at Minneapolis, Minn., has been transferred to Chicago, succeeding **A. Yappen,** promoted, as noted elsewhere. The authority of **F. E. Rice,** who has also been serving as district carpenter at Minneapolis, will be extended to cover the territory recently under the direction of Mr. King.

**Percival S. Baker,** assistant engineer on the Philadelphia & Reading, has been appointed engineer of bridges and buildings with headquarters at Philadelphia, Pa., succeeding **Clark Dillenbeck,** promoted, as noted elsewhere. Mr. Baker was born in Philadelphia, Pa., on November 13, 1877. He was educated at the University of Pennsylvania, graduating in 1899. After graduation he entered the employ of the American Bridge Company as a draftsman in the Pencoyd plant, where he remained until 1905. Then for one year he was employed by the Philadelphia Rapid Transit Company on subway and elevated work. In April, 1906, he entered the employ of the Reading as a computor in the bridge department, and in August, 1914, he was advanced to assistant engineer, holding this position until his recent promotion.

**A. Yappen,** district carpenter of the Chicago, Milwaukee & St. Paul at Chicago, has been appointed assistant engineer in charge of bridge maintenance, inspection and erection on lines east of Mobridge, S. D., with the same headquarters. Mr. Yappen graduated from the high school at Sabula, Iowa, and after receiving a technical education obtained a position as a rodman on location work with the Northern Pacific. He remained on the project throughout the construction work, being later placed in charge of the bridge work. Later he was employed as a transitman on the San Joaquin & Kern River, from Antioch to Bakersfield, now a part of the Southern Pacific. From this work he went to Mexico on the location of the Chihuahua Railroad. After spending some time in South America and a year in the gold fields of Alaska he returned to the United States and in 1892 entered the bridge and building department of the Chicago, Milwaukee & St. Paul as assistant engineer under the engineer of masonry construction. In 1901 he was promoted to the position of district carpenter, with headquarters at Milwaukee. In 1906 he was transferred to the Southern district, with headquarters at Chicago, where he remained until the time of his recent promotion.

## PURCHASING AND STORES

**J. H. Nichols** has been appointed general storekeeper of the New York, Chicago & St. Louis with headquarters at Cleveland, Ohio.

**C. H. Rothgery** has been appointed storekeeper of the Baltimore & Ohio, Western Lines, with headquarters at Lorain, Ohio, vice **W. H. Dean,** transferred.

**E. A. Workman,** storekeeper of the Baltimore & Ohio Eastern Lines, with office at Keyser, W. Va., has been appointed district storekeeper of the Maryland district, with headquarters at Camden station, Baltimore, Md., vice **O. V. McQuilkin,** deceased.

**C. O. Deabler** has been appointed chairman and Dr. Hermann von Schrenk a member of a newly created Forest Products section of the Purchasing Committee of the Southwestern region. Mr. Deabler was formerly lumber buyer of the Missouri Pacific and has been more recently assistant to the manager of the Forest Products Section of the United States Railroad Administration at Washington.

**G. W. Alexander,** assistant to the Southern Regional Purchasing Committee of the United States Railroad Administration, with office at Atlanta, Ga., has been appointed general storekeeper of the Central of Georgia, with headquarters at Macon. He began railway work in 1905 at Atlanta. In 1907 he was appointed ticket agent at Bremen and then to 1909 was mechanical clerk to the general foreman at Cedartown. From 1909 to 1912 he held different clerical positions in the division storekeeper's office at Macon and later was appointed division storekeeper. In April, 1918, he was appointed to the Southern Regional Purchasing Committee.

**N. C. Foss,** purchasing agent of the Ann Arbor, has been appointed assistant purchasing agent of that road, the Pere Marquette, the Detroit & Toledo Shore Line, the Grand Trunk Western Lines, the Detroit & Mackinac, the Detroit, Bay City & Western, the Port Huron Southern, the Port Huron & Detroit, the Fort Street (Detroit) Union Depot Railroad, and the Lake Michigan Car Ferry Association. He will assist in the purchasing of coal, materials and supplies, and will have headquarters at Detroit, Mich. **M. M. Drake** has been appointed assistant purchasing agent of the above roads, in charge of stores, with office at Battle Creek, Mich.

**Charles W. Yeamans,** assistant engineer of the Chicago & Western Indiana, has been appointed purchasing agent of that road and the Belt Railroad of Chicago, with headquarters at Dearborn station, Chicago, succeeding **Roy Benson,** transferred to other duties. Mr. Yeamans began railway work on May 1, 1905, as a clerk in the engineering department of the Chicago, Burlington & Quincy. Two years later he was promoted to chief clerk to the engineer of track elevation. On May 1, 1910, he resigned to go with the Chicago & Western Indiana in charge of the field of construction office with headquarters at Chicago. During the construction of the Clearing yard between 1913 and 1915 he was material agent. Later he became chief clerk in the engineering department, and on May 1, 1918, was appointed assistant engineer in the construction department, which position he held until December 1, when he received his appointment as purchasing agent, as mentioned above.

## OBITUARY

**William Riley,** formerly general roadmaster on the Chicago & Alton, the Chicago, Indiana & Southern and the Indiana Harbor Belt, died at Chicago on January 10, at the age of 71.

**John Atlee,** division engineer of the Pennsylvania railroad, with headquarters at West Philadelphia, Pa., fell from the platform of a train at West Philadelphia Station on January 9 and was instantly killed. Mr. Atlee had been in the service of the Pennsylvania for 16 years and was 45 years old at the time of his death. After receiving his education in the public schools of Philadelphia, he entered the service of the Pennsylvania Railroad in 1902 as a rodman in the engineering department. He subsequently served in various capacities on a number of divisions of the system, being in turn transitman, assistant supervisor and supervisor. In November, 1917, when supervisor on the Pittsburgh division, he was promoted to the position of division engineer on the Renovo division with headquarters at Erie, Pa. Later he was transferred to Philadelphia, where he was located at the time of his death.

John Atlee

# CONSTRUCTION NEWS

**The Central of Georgia** has authorized the construction of a rectangular timber engine house and four concrete cinder pits at Birmingham, Ala. The building will be constructed to house four large Mallet locomotives. The work will be done by Illinois Central forces.

**The Chicago Union Station Company** is to resume construction work on the new Union Station at Chicago. Contracts are about to be let on certain portions of the work and bids are being requested on other parts. The budgets for the work this year call for an expenditure of five or six million dollars by the Union Station Company and about three million dollars by roads entering the Union Station on work incidental to the Union Station facilities. The program includes the depression of tracks between Van Buren and Twelfth streets to meet the grades outlined in the city ordinances, the rearrangement of tracks to permit the construction of viaduct foundations, the construction of the Harrison street viaduct, the east half of the Burlington freight house, the Polk street viaduct, the Canal street viaduct between Polk and Taylor streets, the Taylor street viaduct, the elevation of Canal street between Taylor and Twelfth streets and the south half of the Twelfth street viaduct. Work will also be started on foundations for the head house, which are expected to be completed this year.

**The Illinois Central** has awarded a contract to the William Graver Tank Works, Chicago, for filtering and sterilizing equipment for a filtration plant to be constructed at Baton Rouge, La. The contract for the construction of the building has not yet been let and possibly this work will be done by the railroad's own forces.

**The Pennsylvania Railroad, Western Lines,** is now carrying out work on a number of new buildings and other facilities incident thereto in connection with a large car repair plant in the East yards at Terre Haute, Ind. Work under construction or contemplated includes an office building, a women's locker room, a men's locker room, a paint shop, a freight car repair shop, a store room building, a painting mill, an extension to the power house, and some material and scrap bins.

This system will also soon construct a freight house at Alliance Ohio, which will be 40 ft. by 250 ft., of brick and timber construction and to cost about $35,000.

The Pennsylvania has awarded a contract to G. A. Fuller, Cleveland, Ohio, for the construction at Denison avenue, Columbus, Ohio, of a 32-stall enginehouse, annex and office; car shop, oil house, power house, sand house, fan house and service building. These buildings will be of reinforced concrete and brick construction with concrete foundations.

At Fort Wayne, Ind., the company has under construction and in contemplation a car repair building, store room and office building, machine shop, blacksmith shop, oil and paint storehouse and firing-up shed.

**The Southern Pacific** has been authorized to construct shop buildings at Sacramento, Cal., to cost about $79,500. The largest structure will be a steel foundry which will cost $45,000. A steel and concrete repair shop will be constructed at a cost of $29,900. The projected work also includes a parcel post building to cost $4,600.

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**The National Railways of Mexico,** according to a report from Monterey, are being rehabilitated under plans which are making a fair degree of progress. All bridges on the main lines are now repaired and in use, and many of the stations have been rebuilt in a permanent manner. The roadbed is reported in fair condition. The number of locomotives in service is about 500, of which 100 belong to industries along the line and are used in the freight service of their owners. About 250 more locomotives are awaiting repairs, delay having been incurred in getting the repair parts.

# SUPPLY TRADE NEWS

## GENERAL

**Dwight P. Robinson & Co., Inc.,** constructing and consulting engineers, announce the opening of their offices at 61 Broadway, New York. This organization is prepared to construct, either from their own designs or from the designs of others, hydro-electric developments, steam power plants, transmission systems, industrial plants, housing developments and steel and reinforced concrete structures; to undertake the electrification of steam railways; to act as consulting engineers, and to make engineering and financial reports and appraisals.

**The Southern Pine Association** will hold its annual meeting at the Hotel Grunewald, New Orleans, La., on February 25 and 26.

**The Wellman-Seaver-Morgan Company** of Cleveland, Ohio, has opened a San Francisco office at 415-417 Rialto building, in charge of Norman S. Ross, to handle business originating from California, Nevada, west of the 115th meridian; Lower California, and the counties of Josephine, Jackson and Klamath in Oregon.

**The Wheeler Condenser & Engineering Company** of Carteret, N. J., announce the acquisition from the Schuette & Koerting Company of Philadelphia, Pa., of the exclusive rights to manufacture and sell steam jet air pumps under patent No. 968,926 in connection with service condensers, jet condensers, barometric condensers, vacuum pans and evaporating apparatus. This patent covers the valuable feature of two or more steam jets working in a series with a condenser between the jets.

## PERSONAL

**Ensign Irving Burrows** has been released from service in the navy and will reopen the San Francisco (Cal.) office of the Blaw-Knox Company within the next two weeks.

**Ernest Baxter** has been appointed general sales manager of the Kansas City Bolt & Nut Company, with headquarters at Kansas City, Mo., succeeding **L. L. Middleton,** promoted.

**A. A. Heller,** treasurer and general manager of the International Oxygen Company, has given up his active managerial duties, and **Eugene Schoen** has been appointed general manager for the company. Mr. Hiller, as treasurer, continues in charge of the financial departments of the business.

**V. I. Smart,** formerly professor of railway engineering and transportation, McGill University, and **J. A. Burnett,** formerly electrical engineer, Grand Trunk Railway System, are now associated as consulting engineers, with office at 821 New Birks building, Montreal. The lines handled will be civil, electrical and mechanical engineering.

**W. J. Austin,** vice-president and general manager of the Austin Company, Cleveland, Ohio, sailed recently for a tour of France, Belgium, Italy and England. While the trip was undertaken primarily for the purpose of developing the export business of his company, Mr. Austin will study the reconstruction methods employed in those European countries with the expectation of collecting information which can be used to good advantage here. He will return about the middle of February.

**Charles H. Wilson,** who has been in active military service in France as a lieutenant of engineers, has been honorably discharged from the army and has resumed his duties of representative of Fairbanks, Morse & Co. During his service with the American Expeditionary Forces, Lieut. Wilson was attached to the British tank corps as mechanical officer and was later with the U. S. tank corps. Prior to his entry into military service Mr. Wilson was located in Houston, Texas, as southwestern representative for Fairbanks, Morse & Co., with which company he had been associated for 14 years. He will now make his headquarters at the St. Louis office.

**Horace N. Trumbull,** who has recently received his discharge from the Engineer Officers' Training School at Camp A. A. Humphreys, Va., has been appointed advertising manager of the Wellman-Seaver-Morgan Company, Cleveland, Ohio. Before entering the service Mr. Trumbull was advertising manager of the SKF Ball Bearing Company of Hartford, Conn.

**William E. Sharp,** who has been elected president of the recently reorganized Grip Nut Company, as noted in the news columns of the *Railway Maintenance Engineer* for December, began his railway career as an apprentice in the car department of the Erie in April, 1889. In October, 1892, he was promoted to general foreman of the car and locomotive department of the same road, with headquarters at Chicago. He left the Erie in 1898, to become assistant superintendent of the Armour Car Lines. In April, 1901, he was promoted to superintendent of those lines. He resigned that position in 1911 to enter the railroad supply business as vice-president of the Grip Nut Company. He was elected president of the company in September, 1916, and became president of the reorganized corporation in November, 1918.

William E. Sharp

**H. W. Clarke,** who until December 15 was connected with the advertising service department of the McGraw-Hill Company at Chicago, has been appointed manager of advertising for the Chicago Pneumatic Tool Company, Chicago. Prior to his connection with the McGraw-Hill publications, he spent eight years with the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., part of the time as a member of the sales and publicity departments and later as western publicity representative, with headquarters at Chicago.

**E. D. Jackson,** formerly assistant to the chief engineer of the Baltimore and Ohio, has been appointed general manager of the Chipman Chemical Engineering Company, Inc., New York. Mr. Jackson entered the service of the Baltimore and Ohio in January, 1903, as a rodman on the Pittsburgh division and remained in the employ of that company until December 15, 1918, when he resigned to accept his new position. Mr. Jackson was born in Front Royal, Va., July 1, 1882, and was educated in the public schools of that town and at the Virginia Military Institute at Lexington, Va., from which he graduated in the course of civil engineering in 1902. With the Baltimore and Ohio he filled the various positions on the engineering corps to that of assistant division engineer while at Pittsburgh, from which he was transferred to Baltimore to the office of the assistant engineer. In 1909 he was appointed division engineer of the Chicago division, with headquarters at Garrett, Ind., remaining there until early in 1910, when he was again transferred to Baltimore in the capacity of assistant engineer in the office of the general manager, having charge of the development of the standard track work system. In 1913 he was transferred to the Philadelphia division as division engineer, and in 1914 returned to Baltimore as assistant to the engineer maintenance of way and later assistant to the general superintendent of maintenance of way and structures.

E. D. Jackson

**Capt. A. Fletcher Marsh** of the Construction division of the army has resumed his duties as secretary of the Marsh & Truman Lumber Company, Chicago. Captain Marsh received his commission almost simultaneously with the entrance of this country into the war and was employed to supervise lumber production and transportation in the interests of the army. During the first five months of his service he was stationed in the Atlantic states south of Washington, D. C., where he was employed on lumber production work. He was later transferred to New Orleans, La., and Birmingham, Ala., where he supervised the transportation of lumber to eastern points. Latterly he was located on the Pacific coast, where he engaged in similar work. **Lieut. E. R. Ross** of the artillery branch of the army and **Lieut. F. L. Bronez** of the American flying forces have also returned to their former positions in the sales organization of the Marsh & Truman Lumber Company.

**Lloyd O. Stratton,** who has been connected with the Oregon Short Line motor car department as a foreman at Pocatello, Idaho, has been appointed western manager for Mudge & Co. at San Francisco, Cal. Mr. Stratton was born at Guide Rock, Neb., on January 2, 1888, and was educated in the public and business schools at Grand Island, Neb. He entered the service of the motor car department on the Union Pacific in August, 1911, with which road he remained until April, 1914, when he went to the Oregon Short Line as motor car foreman at Pocatello, Idaho. For the past seven years Mr. Stratton has been identified with the motor car industry and in connection with his recent appointment as western manager for Mudge & Co. he will have charge of the sales and service departments for that company in the Pacific states with office in the Crocker building, San Francisco, Cal.

Lloyd O. Stratton

## TRADE PUBLICATIONS

**Pneumatic Hammer.**—A six-page folder describing in detail the construction and operation of the Barr pneumatic high speed hammer has been published by H. Edsill Barr, engineers, Erie, Pa.

**Tool Steels.**—The Carnegie Steel Company, Pittsburgh, Pa., is now offering to the trade a new line of carbon tool steels made in five grades containing different proportions of carbon, which are intended for utilization in the manufacture of tools where heretofore alloy steels have been used. A catalog has been issued describing these steels and presenting practical information for the steel user without going into an extended discussion of the theories of heat treatment. It contains a chart in colors of heat and temper colors which is a direct reproduction by color photography from test pieces heat treated to the temperatures shown. It affords a direct comparison by the blacksmith in the shop whereby it is possible to eliminate the effect of the different lighting conditions. Pages devoted to reproduction of labels of the fine grades also specify the various uses for each grade of steel and facilitate the selection of the proper grade for any particular use.